

WEAPONS &
INNOVATIONS

DRAWER 10

CIVIL WAR

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The Civil War

Weapons and Innovations

Excerpts from newspapers and other sources

From the files of the
Lincoln Financial Foundation Collection

Arms.

To show the superiority of the improved over the common musket, we make a few extracts from an article in the *North British Review*, for August 1858, entitled "Our Army in India," American Republication, p. 119.

"By the practice at the School at Hythe, it is proved that with the Minie a more effective fire was given at a thousand yards, than was given with the patronage-appointed general's weapon, the Brown Bess, at eighty. The cavalry man who approaches the charging distance of two hundred yards, within three hundred yards of the Minie, in well trained hands, will breathe his last; so that for the future, there will be an end of the practice of bayonet charges. From India we now hear of the withering fire of the Minie, the 'dreadful Minie' of its having silenced first class artillery, wielded by gunners of our own training."

"As examples of the power, of the new weapon, an instance is stated as of recent occurrence in India, where a company of Minies, finding a company Sepoys come within range, felled the whole like a wall, one man alone getting away, when a marksman stepped out and felled him also."

In the Crimea, it is said, a captain fired more than a hundred times, and an enemy was seen to fall after every shot.

In a note to page 120. "The Minie is a far more efficient implement than the old rifle" and the *Waltworth* has a range one half further, and an accuracy several times greater, at the same ranges."

We commend these facts to our State and City authorities in arming our troops.—*Philadelphia Enquirer*.

The following placard was posted up in the camp of the Confederate soldiers near Montgomery the other day.

\$50 REWARD.

Lost—Since my arrival in Montgomery, my military enthusiasm. It is of no use to any one but the owner, who passes it easily; and the above reward will be given to the honest finder, and no questions asked.

Ex-Alderman of Mobile.

New South Wales Advertiser 3-7-61

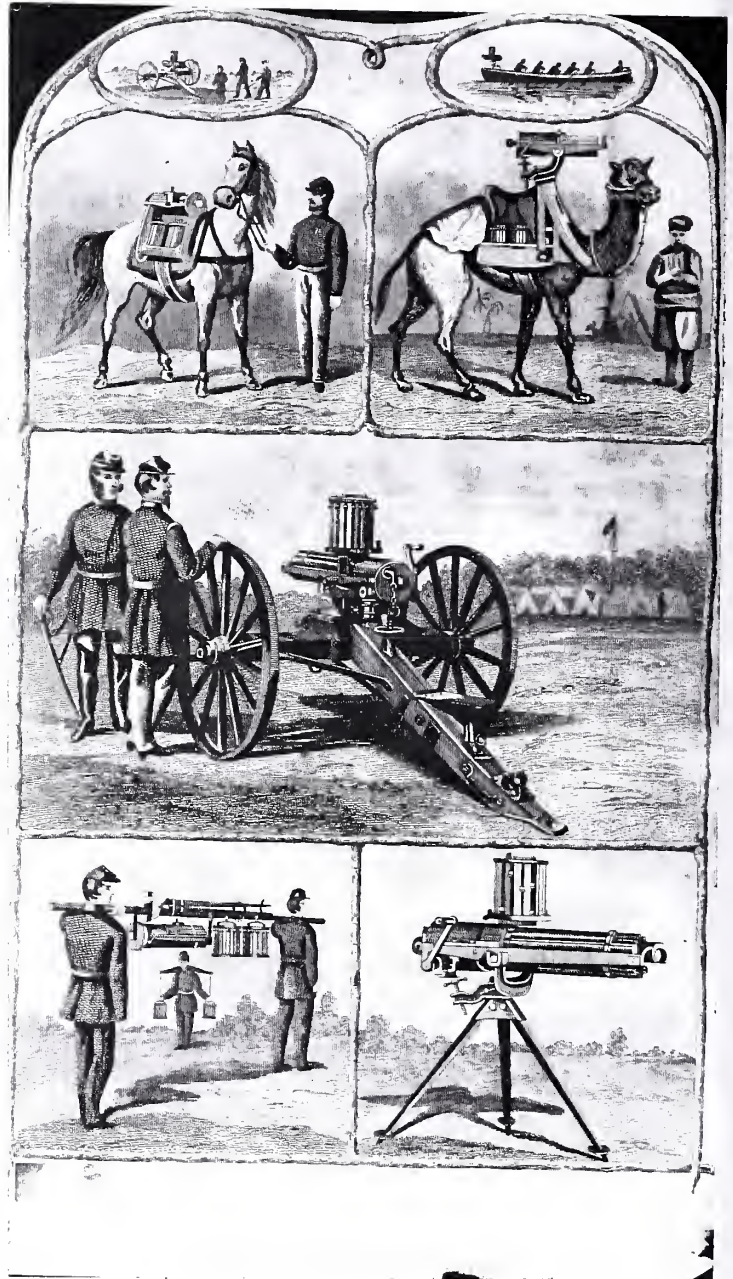
Hartford, June 15th 1877,

My Dear Friend.

It may be interesting to you to know how I came to invent the gun which bears my name; I will tell you: In 1861, during the opening events of the war (residing at the time in Indianapolis, Ind.) I witnessed almost daily the departure of troops to the front and the return of the wounded, sick and dead; The most of the latter lost their lives, not in battle, but by sickness and exposure incident to the service. It occurred to me if I could invent a machine—a gun—which could by its rapidity of fire, enable one man to do as much battle duty as a hundred, that it would, to a great extent, supersede the necessity of large armies, and consequently, exposure to battle and disease be greatly diminished. I thought over the subject and finally this idea took practical form in the invention of the Gatling Gun.

Yours truly
R. M. Gatling

Miss Lizzie Jarvis.



With Carbine He Hit 1863 Bull's Eye Repeatedly.

A GENTLEMAN in this city, says an old issue of the Indianapolis Sentinel, has in his possession a curious relic of the late President Lincoln. In August, 1863, Mr. S. was a clerk in the navy department at Washington. The accumulation of business at that time frequently compelled him to work after office hours. About 6 o'clock on the evening of the 31st, the clerks having all left the department, and the watchman not yet on duty, Mr. S. sat at his desk alone, as he thought, in the building. Suddenly he heard some one walking up and down the hall with long strides, muttering to himself.

"I do wonder if they have gone off and left the building all alone," he heard the voice say as he came to the door. Looking down the hall, he saw President Lincoln, who presently turned, and seeing Mr. S. approaching said: "Good evening, sir," "I was just looking for that man who goes shooting with me sometimes," said Mr. Lincoln. Mr. S. happened to know that President Lincoln was fond of firearms, and was in the habit of testing every new gun invented, which at that time was a pretty frequent occurrence. The messenger of the ordnance bureau generally went with Mr. Lincoln on his trial trips, so Mr. S. told him he would see if the man was still in the building. Finding that he was not, Mr. S. offered his services. "All right," said Mr. Lincoln, "get your coat on and come on." He followed Mr. S. into the room and stood at his desk, drumming on it with his fingers, and keeping up a running fire of talk about the amount of work they all had to do, how hot the weather was, etc. Mr. S. being ready, they started. "But hold on," said Mr. Lincoln, "we must have something to shoot at." So Mr. S. went back to his desk and got half a sheet of congress letter paper; this he folded twice, making the target four thicknesses of paper.

At the door of the navy department they met a man from the White house with a box of ammunition and a Spencer carbine, which gun had been recently invented, and the qualities of which Mr. Lincoln was going to test. Mr. S. took the gun and Mr. Lincoln the cartridge box, and then Mr. S. took three steps and Mr. Lincoln took one, and with a trot and a stride, the two made their way across the lot south of the White house. Arriving at a safe distance, Mr. S. placed the target against a guy post standing in the ground, and the president, having loaded the carbine, paced off the distance, about 80 to 100 feet, raised the rifle to a level, took a quick aim, and fired the round of seven shots (the Spencer carbin is a seven barreled revolver) in quick succession, the bullets chipping all around the target like a Gatling gun, and one striking near the center.

"I believe I can make this gun shoot better," said Mr. Lincoln, after they had looked at the result of the fire. With this he took from his vest pocket a small wooden sight which he had whittled from a pine stick, and adjusted it over the sight of the carbine. He then shot two rounds, and of the fourteen bullets, nearly a dozen hit the paper. Mr. Lincoln then wanted Mr. S. to shoot, but as that gentleman wasn't proud of his marksmanship, he declined, and the two walked across the lot to the White house, Mr. Lincoln with the cartridge box and carbine on his shoulder, chatting like a boy home from hunting, and Mr. S. with the target in his pocket, getting in a word edgewise when he could.

At the White house door they parted, with a cheery "Good night," from Mr. Lincoln, and the whirling of time yesterday brought the target before the eyes of a Sentinel reporter. It is now a faded piece of paper about four inches square. Near the center is a blackened hole, through which Mr. S. said the president, having got good range, sent five or six bullets in succession. A little to the right of this is another spot pierced by two bullets, and just below a third perforation. These within a radius of about two inches. At the left lower corner a piece of the paper is chipped out, and another at the right center, while the post all around the paper, Mr. S. said, looked as if it had the smallpox.

HE BOSSSED THE PRESIDENT.

Abraham Lincoln was always the friend of the man who did his duty, as many a good soldier and official discovered to his lasting benefit. Mr. Chittenden in his "Recollections" tells a story that illustrates this fact. It was when the President paid a visit to Fort Stevens, when an attack was expected upon Washington:

A young colonel of artillery, the officer of the day, was in great distress because the President would expose himself. He had warned Mr. Lincoln that the Confederate sharpshooters had recognized him and were firing at him, and a soldier near him had just fallen with a broken thigh. The officer asked Mr. Chittenden's advice, saying that the President was in great danger.

"What would you do with me under similar circumstances?" asked Mr. Chittenden.

"I would civilly ask you to take a position where you were not exposed."

"And if I refused to obey?"

"I would send a sergeant and a file of men and make you obey."

"Then treat the president just as you would me or any civilian."

"I dare not. He is my superior officer; I have taken an oath to obey his orders."

"He has given you no orders. Follow my advice and you will not regret it."

"I will," said the officer. "I may as well die for one thing as another. If he were shot I should hold myself responsible."

He walked to where the president stood. "Mr. President," he said, "you are standing within range of 500 rifles. Please come down to a safer place. If you do not, it will be my duty to call a file of men and make you."

"And you would do right, my boy," said the president, coming down at once. "You are in command of this fort. I should be the last man to set an example of disobedience."

The president was conducted to a place where the view was less extended but where there was almost no exposure.

Lincoln's Penetrating Remarks.

From the Troy Times.

Lincoln, with his quaint way of seeing through human nature, read Curtin like a book. With all the respect which he felt for the Governor's strong points was mingled a little irritation at the side of his nature which the latter would show now and then. The two men got along very well till the war was half-way through, and a Confederate army made an attempt to cut through Pennsylvania to the North. Then Curtin was seized with a momentary panic and telegraphed to the President: "The Rebels are within four miles of Harrisburg and have begun firing." The answer which came back was characteristically Lincolnian: "What are they firing at?" This ended the correspondence. In after days Lincoln used to say, alluding to the episode: "Curtin would be a better man if he didn't lose his head in emergencies." And Curtin used to say of the war President: "Lincoln was a great man—a very great man—but it was hard sometimes to know how to take him."

Lincoln as a Military Hero.

He never took his campaigning seriously. The politician's habit of glorifying the petty incidents of a candidate's life always seemed absurd to him, and in his speech, made in 1848, ridiculing the effort on the part of General Cass's friends to draw some political advantage from that gentleman's respectable but obscure service on the frontier in the war with Great Britain, he stopped any future eulogist from painting his own military achievements in too lively colors. "Did you know, Mr. Speaker," he said, "I am a military hero?" In the days of the Black Hawk war I fought, bled and came away. I was not at Stillman's defeat, but I was about as near it as General Cass was to Hull's surrender; and like him, I saw the very place seen afterwards. It is quite certain I did not break my sword for I had none to break, but I bent my musket badly on one occasion. If General Cass went in advance of me picking whortle berries, I guess I surpassed him in charges on the wild onions: If he saw any live fighting Indians it was more than I did, but I had a good many bloody struggles with mosquitoes; and although I never fainted from loss of blood, I can truly say I was often very hungry. Mr. Speaker, if ever I should conclude to doff whatever our democratic friends may suppose there is of black cockade Federalism about me, and there upon they shall take me up as their candidate for the Presidency I protest that they shall not make fun of me, as they have of General Cass, by attempting to write me into a military hero."—December 1886.

LINCOLN LORE

Bulletin of the Lincoln National Life Foundation - - - Dr. Louis A. Warren, Editor
Published each week by The Lincoln National Life Insurance Company, Fort Wayne, Indiana

Number 584

FORT WAYNE, INDIANA

June 17, 1940

MUNITIONS IN LINCOLN'S DAY

The tremendous shift in the type of munitions used during the past decade reveals the most startling development in mechanic art which civilization has observed. The simplicity of devices for war in Lincoln's day and his reaction towards some of the innovations recommended, is of interest when the whole world seems to be drawn into a discussion of war implements by present events.

Erickson

The name of Erickson immediately comes to mind when one is thinking of innovations in the field of munitions, especially as they had to do with navigation. Erickson as early as 1828 invented a self-acting gun-lock to be used on naval cannon. In 1841 under order of the United States he designed the "Princeton", the first war vessel to have its propeller under the water out of range of gun shot, with other features such as a telescopic smoke-stack, gun-carriages of wrought iron, and an optical instrument for ascertaining distances. The "Princeton" is regarded as the pioneer of modern naval construction.

It is the idea embodied in his famous "Monitor," "the cheesebox on a raft," as it was called, for which he is best known. The notion first took form as early as 1836 and in 1854 he submitted plans for the war vessel to Napoleon III. The first vessel of this type, however, was built at the beginning of the Civil War in 1861 at Green Point, New York. The important place the Erickson warships took in the naval battles of the Union is well known.

President Lincoln visited the "Monitor" a few days after its battle with the "Merrimac." Assistant Secretary of the Navy Fox made a short speech in which he said he was familiar with the story of the building of the "Monitor," and while he did not wish to withhold any credit from Captain Erickson, the inventor, he said that "the country was principally indebted for the construction of the vessel to President Lincoln."

The day after Lieutenant Worden and the "Monitor" met the "Merrimac", he was detained in his room by injuries and was there visited by President Lincoln. He was advanced to the rank of Captain for his bravery. Lincoln's note written to Gideon Welles, Secretary of the Navy, on the day of his visit to Worden is of interest:

Executive Mansion, March 10, 1862.

Hon. Gideon Welles.

My dear Sir.

I have just seen Lieut Worden, who says the "Monitor" could be boarded and Captured very easily, first, after boarding, by wedging the turret, so that it would not turn, and then by pouring water in her & drowning her machinery. He is decidedly of Opinion she should not go sky-larking up to Norfolk.

Yours truly
A. Lincoln

Dahlgren

The name of another Swedish inventor should also be mentioned in connection with the "Monitor", as she carried a new type of gun called a Dahlgren gun. The first gun according to his design was cast in 1850, and later the inventor produced a rifled cannon and still later developed the boat howitzers with iron carriages.

It was under Dahlgren's supervision that the ordnance department at Washington acquired extensive additions: a foundry for making cannon, a shop for the manufacture of gun carriages, an experimental battery, and so on. Lincoln placed great dependence in Dahlgren as an authority on arms and was interested especially in the new developments in rifles. When some one approached him with a weapon which seemed to have merit, he would write a note similar to this one sent to Dahlgren on June 10, 1861:

Executive Mansion, June 10, 1861

Capt. Dahlgren

My dear Sir:

You have seen Mr. Blunt's new gun—What think you of it? Would the government do well to purchase some of them? Should they be of the size of the one exhibited or of different sizes.

Yours truly,
A. Lincoln

On an occasion when Lincoln was at the Navy Yard witnessing experiments with a newly-invented gun and a discussion was underway about the merits of the new gun, Lincoln observed an ax on the wall and taking it down said: "Gentlemen, you may talk about your 'Raphael repeaters' and 'eleven-inch Dahlgrens', but here is an institution which I understand better than any of you." Upon making this statement he held the ax out at arm's length by the end of the handle, a feat which no one in the party could perform.

Gatling

The most remarkable invention during the war, although it was not perfected to the extent that it became of much use, was the Gatling gun or, as we call it, the machine-gun.

Richard Jordan Gatling was born in North Carolina. Even as a boy he had an inventive mind and designed several improvements on machinery for planting and thinning cotton, sowing rice, and finally for drilling wheat. In 1850 he invented a hemp-breaking machine, and in 1857 a steam plow. He attended lectures on medicine at Laporte, Indiana, and Cincinnati, Ohio, but never practiced his profession.

When the war broke out he conceived the idea of a revolving battery gun, and the first of these was made in Indianapolis in 1862. An assignment of a dozen was sent to General Butler and used by him on the James River with more or less success. Gatling began to improve his gun, but before he had it perfected so that it was generally accepted (in 1865), the war had come to a close.

The shells in a feedcase were fed into a hopper at the top of the gun while the gunner turned a crank by which the gun revolved. Other feedcases could be substituted without interrupting the discharges. The original Gatling gun fired only from 250 to 300 shots per minute, but Gatling later perfected the instrument so that it fired 1200 a minute.

The Lincoln National Life Foundation is in possession of an original letter written by Mr. Gatling to Miss Lizzie Jarvis, in which he not only explains his invention but also explains that he believes its development will not necessitate the use of large armies, thereby reducing the suffering on the battlefield. The copy of the original letter follows:

Hartford, June 15th, 1877.

My Dear Friend.

It may be interesting to you to know how I came to invent the gun which bears my name; I will tell you: In 1861, during the opening events of the war (residing at the time in Indianapolis Ind.) I witnessed almost daily the departure of troops to the front and the return of the wounded, sick and dead; The most of the latter lost their lives, not in battle, but by sickness and exposure incident to the service. It occurred to me if I could invent a machine—a gun—which could by its rapidity of fire, enable one man to do as much battle duty as a hundred, that it would, to a great extent, supersede the necessity of large armies, and consequently, exposure to battle and disease be greatly diminished. I thought over the subject and finally this idea took practical form in the invention of the Gatling Gun.

Yours truly
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Miss Lizzie Jarvis

LINCOLN LORE

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Number 648

FORT WAYNE, INDIANA

September 8, 1941

CURIOUS LINCOLN CURIOS

Even though some object may be but remotely associated with Abraham Lincoln, it is usually classified among the rarities in the collectors realm. It is not difficult to tabulate various antiques and household items which were supposed to have been in the Lincoln home, office or White House. The wearing apparel of the members of the Lincoln family and accessories, such as jewelry, fans, canes, umbrellas, etc. has also been catalogued. The implements used on the farm and in the carpenter shop are easily arranged in their proper order, however, there is always the inevitable miscellaneous group of relics that is composed of the unusual items, comparable possibly to the "catch all" envelope, which Lincoln marked, "If you can't find it anywhere else, look here."

Some of the unusual curios which have come to the attention of the Lincoln National Life Foundation. Information about these items which refuses to be pigeonholed under definite subjects, is presented in this issue of Lincoln Lore.

Cowhide Sachel

A sachel described as "a plain box split in two and covered with black cowhide leather" is said to have been presented by Mr. Lincoln to his neighbor, Mr. Remann of Springfield, at the time the Lincolns left Washington. This curio is now the valuable possession of a museum in the far West.

Inscribed Jackknife

Upon Mr. Lincoln's death, Charles Forbes, one of the White House attendants, came in possession of several Lincoln mementos, one of them a jackknife. On the handle the manufacturer who presented it to the President had eight diamond-shaped ornaments inlaid in the handle and on each ornament a letter inscribed which spells, A. LINCOLN. This curio is in a Chicago exhibit.

Shingle Target

Someone is said to have preserved an old target made of a shingle, which Lincoln used while President, in trying out some newly invented rifle. The story does not relate as to whether or not Lincoln hit the bull's-eye. The target is supposed to be in existence and there has been some inquiry at the Foundation information bureau about it.

Mayflower Violin

While there does not seem to be much evidence that Lincoln was a musician beyond the ability to play the jew's-harp, yet there is a violin which came over in the famous "Mayflower" which Lincoln, it is claimed, "owned and used" and later presented to Coleman Gaines of Springfield.

Leather Wallet

One day Lincoln is said to have been at New Salem working with a fellow laborer, and while at dinner, their coats, which they left in the field, were badly chewed by the stock. Lincoln's wallet was in his coat and the prints of the cow's teeth are still visible in the leather. The wallet has a notebook attached which bears the name A. Lincoln and dated September 17, 1833. The name Jemenia R. Hill is written on one page.

Powder Horn

A noted sheriff who lived at Medina, Ohio, previous to 1920, came in possession of an old powder horn which was found in an old log house in Macon County, Illinois in 1870. The name "Abe Lincoln 1830" is inscribed on the horn.

Political Flagpole

A relic seventy feet in length would be difficult to show in any museum case, but a flagpole raised to celebrate Lincoln's election in 1864 was stored for seventy years in the top of an old covered bridge in Scioto County, Ohio. It was cut by John S. Huddleston and his brother, Powell Huddleston while they were home on a furlough in the fall of 1864.

Pullman Berth

A pullman car berth in which Abraham Lincoln is said to have slept has been preserved in Selings Grove, Pennsylvania. The berth was used as a bed for many years by C. C. Mason, who was for fifty years in the upholstering department of the Pennsylvania Railroad at Altoona.

Primitive Bootjack

Tradition claims that while a young man living near Springfield, Illinois, Lincoln was walking through the woods one day with James Danley. Their conversation turned to boots and Lincoln, who had an ax with him, made the bootjack for Mr. Danley out of the forks of a small tree.

Beaver Robe

When Lincoln visited Council Bluffs in 1859, he made the trip from Leavenworth to the bluffs in a steamboat, whose captain was Joseph LaBarge. After Lincoln became President, LaBarge presented him with a robe made of ten beaver pelts secured from the Indian Chief, Crooked Elbow. When the gift was thrown over Lincoln's shoulders, he is said to have pulled it about him "Indian fashion", danced about a bit and then let out a warwhoop.

Eagle Feathers

There was an eagle which went through the Civil War as the mascot of a Wisconsin regiment. It was nicknamed "Old Abe". In the midst of battle it would cry out from its perch and is said to have inspired the members of the regiment to greater valor. Three feathers from this eagle were once offered to the Foundation as appropriate Lincoln souvenirs.

Lightning Rod

It will be recalled that Lincoln once subdued a political opponent in Springfield by referring to the lightning rod, which his adversary had caused to be placed on his house as Lincoln concluded "to protect him from an angry God". One of the early pictures of Lincoln's home, however, shows that his own house was also equipped with the protective device. "A piece $\frac{3}{4}$ inches long of the lightning rod" from the Lincoln home, one person cherishes as a Lincoln treasure.

Rail Chip

A correspondent offered to sell to the Foundation a chip from a rail Abraham Lincoln split while residing on the farm on which he was born in Kentucky. Inasmuch as Abraham was but two years old when he left the birth place farm, he was a pretty small chip to be splitting rails at that age.

3520 Bainbridge Rd.
Cleveland Heights, Ohio.
November 12, 1941,

Gentlemen;

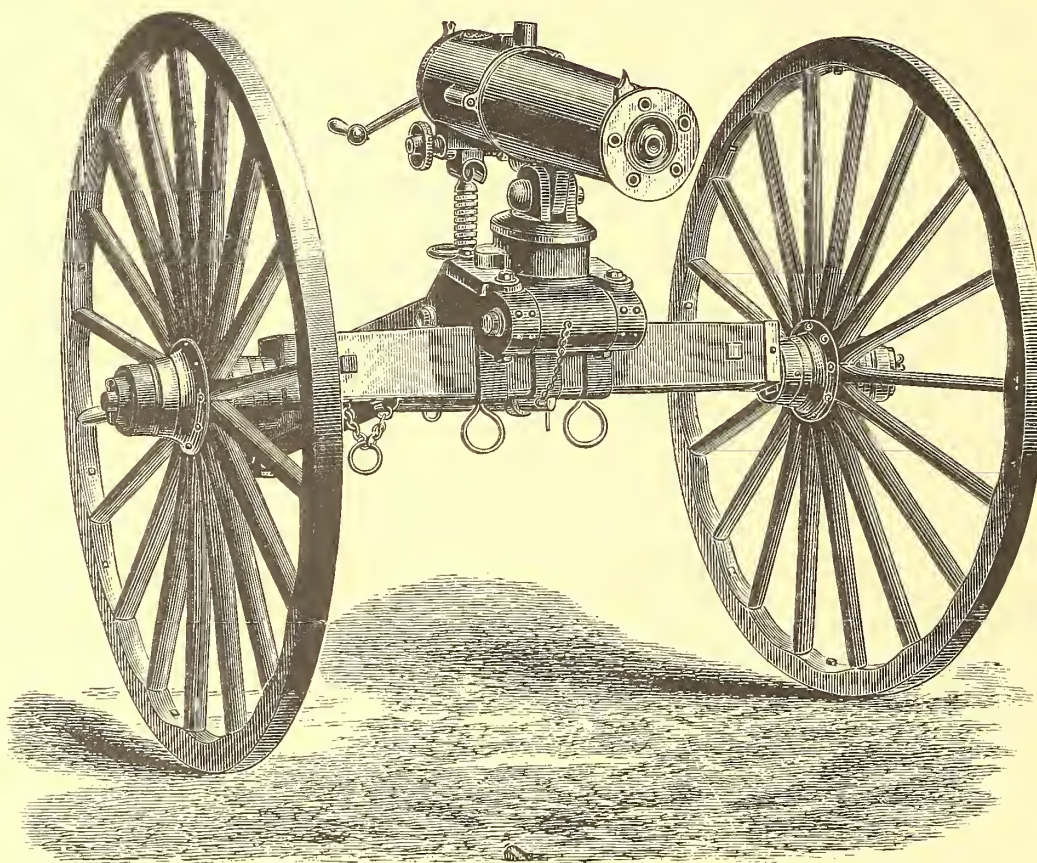
I read your issue of Lincoln
Lore, number 648, September 8, 1941, on
Lincoln Curios. I paid particular att-
ention to the article on the Shingle
Target. I believe this ~~of~~ shingle can
be found today in the State House in
Indianapolis, Indiana. I am enclosing
an article concerning this target, which
I clipped out of the arms catalog of
the Francis Bannerman Sons Co. of
501 Broadway, New York City, dealers
in antique and modern firearms.

Yours Truly,

Robert Peterson

The Louisville Times
April 20, 1959

The first machine gun in history was bought by Abraham Lincoln for the U.S. Army. Lincoln called the new type gun "a coffee mill."



New Model Five Barreled Gatling Gun. Weight 97 Pounds.

As a practical military machine gun, the GATLING has no equal. It fires from 800 to 1,000 shots per minute, has great accuracy, and the larger calibres have an effective range of over two miles. The following calibres are made: .42, .43, .45, .50, .55, .65, .75, and 1 inch. It has been adopted by nearly all the principal governments of the world.

Address,

Gatling Gun Company,

HARTFORD, CONN., U. S. A.

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LeRoy E. Smith,

Publisher

Robert H. Fowler,

Editor, General Manager

Editorial Offices

Box 1831, Harrisburg, Pa.

(Phone 234-5091) 17105

Circulation, Advertising Offices

302 York Street, Gettysburg, Pa.

(Phone 334-5390) 17325

EDITORIAL STAFF:

Col. Wilbur S. Nye,

Managing Editor

Stephen E. Ambrose,

Robert D. Hoffsummer,

Frederic S. Klein

Associate Editors

Frederic Ray,

Art Director

Manuel Kean,

Pictorial Architect

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Elden E. Billings,

Dr. William E. Stauffer,

Books

F. V. Uley,

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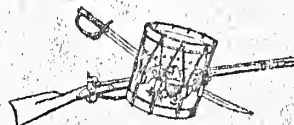
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Gettysburg Office Staff

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April 1969

IN THIS ISSUE

Into the Furnace of the Wilderness

By Robert S. Robertson.....Page 4

Incident at Fort Granger

By John E. Bakeless.....Page 10

The Spring Hill Legend — A Reappraisal

By Stanley F. Horn.....Page 20

The Ellsworth Guns

By Francis E. Haselberger.....Page 31

The Irish Brigade

By John F. McCormack, Jr....Page 35

DEPARTMENTS

What's Coming in CWTI.....Page 2

Back Issues Available.....Page 13

Letters to the Editor.....Page 32

Book Reviews.....Page 50

Classified.....Page 56

OUR COVER: "Skirmish in the Wilderness," painted by Winslow Homer in 1887. Reproduced through the courtesy of the New Britain Museum of American Art (Harriet Russell Stanley Fund). Photograph by E. Irving Blomstrann. A first-person account of The Wilderness battle begins on page 4 of this issue.

BACK COVER: This mystery photograph was sent to CWTI by Mr. Wilbur G. Kurtz, Jr., of Atlanta, Ga. Can any of our readers identify what appears to us to be a one-man submarine and the whereabouts of this "what-is-it?"

OTHER ILLUSTRATIONS are credited: (KA) for Kean Archives of Philadelphia, (LC) for Library of Congress, (NA) National Archives, (BL) "Battles & Leaders," (HW), "Harper's Weekly," and (FL), "Frank Leslie's Illustrated Newspaper."

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The Ellsworth Guns

At least 36 of these unusual little breech-loading cannon served in the war. But where are they today?

By Francis E. Haselberger

THE Ellsworth Gun was the only breech-loading artillery piece manufactured for the Union Army in the U. S. per military contract during the Civil War. Also it was the only breech-loading cannon purchased by the Federal Government, other than a 70-pounder Ellsworth bought in England.

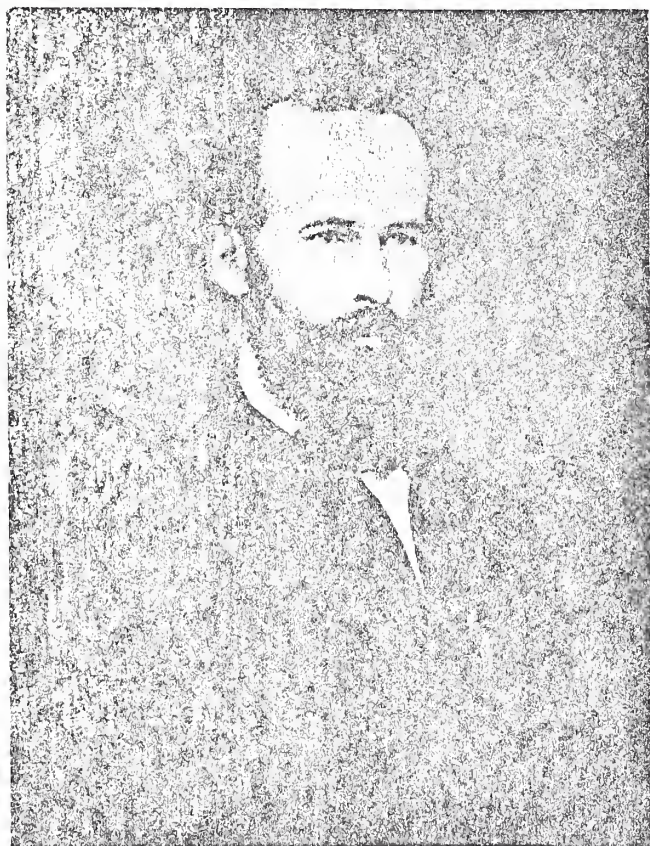
Ellsworth guns were rifled, weighed about 450 pounds, and had a range of three miles at 10 degrees elevation. The four-foot barrel weighed about 300

pounds and had a bore of one and one-half inches. The outside diameter at the breech was six inches, and at the muzzle, three and one-half inches. The breech mechanism was a modification of the Joslyn Rifle Patent, consisting of a cone and expanding rings, held in place by a tapered steel key which passed through the shank of the breech. A handle opened the breech piece. The conical, chilled-iron, 17-ounce ball, wound with tallow-soaked cord, fitted into a cup at the end of a brass cartridge. The three-ounce charge of Government-proof powder was ignited through perforations near the other end. Instead of a limber, the gun carriage had a drag rope attached for hauling by four men. Sabin P. Pond claimed that the cannon could be made very rapidly in most of the machine shops of New England.

THE man responsible for this curious hybrid, a cross between a Brobdingnagian rifle and a Lilliputian cannon, stated it could be loaded ordinarily in five seconds but could probably be fired three or four times a minute. Ammunition cost was about 35 to 45 cents per round. Unfortunately, extensive searching has not revealed any sketches or pictures of this unusual artillery piece.

Massachusetts Congressman Eli Thayer, the developer of the gun, was described as being a man of eccentric humor, and of remarkable and advanced thought mixed with practical sense. He was an inventor, an educator, a politician, and an ardent abolitionist. He had founded the New England Emigrant Aid Society which sent Free-soilers and Sharps rifles into Kansas during the 1850's.

Thayer bought the manufacturing rights to B. F. Joslyn's new breech-loading rifle and, using a little Yankee ingenuity, applied the same design to a little breech-loading fieldpiece of his own. He and his two partners, Sabin P. and Daniel B. Pond, both



Massachusetts Congressman Eli Thayer invented the "Ellsworth Gun." This breech-loader saw little service in the war. (LC)



Colonel Elmer E. Ellsworth, whose Fire Zouaves had two of Thayer's breech-loading guns. By association with this famous unit the cannon thus came to be called the "Ellsworth Gun."

of New York City, proposed it to occupy a space between the rifled musket and the 6-pounder rifled gun. They sent a dozen out to chastise the Kansas "border ruffians."

IN April 1861, Thayer sold two of his little cannon to the Union Defense Committee of New York for the use of Colonel Ellsworth's 1st Zouave Regiment, New York Militia. Thereafter he called his weapon the Ellsworth Gun.

On July 29, 1861, Thayer Incorporated offered the use of its cannon to General McClellan. Evidently Little Mac must have been unimpressed, but in September Thayer obtained an appointment with President Lincoln and successfully demonstrated the maneuverability and rapidity of fire of his guns. Lincoln was impressed and ordered twenty of the guns at a cost of \$350 each on November 29, 1861. The guns were purchased from Sabin and Daniel Pond, manufactured by Goddard, Rice and Company, and were delivered on December 4, 1861, obviously being already made by the time of the contract. They were stored in the Washington Arsenal, where they were regarded with tolerable skepticism. Lieutenant Colonel Ramsey, commander of the Washington Arsenal, later confessed that he supposed the guns would never be introduced into the service.

Two more Ellsworth Guns were ordered by General Ben Butler on February 15, 1862 and were delivered

on May 3d. They evidently were little used because they are not mentioned again.

TO THE surprise of Ramsey, General John C. Frémont asked for the Ellsworth Guns in the spring of '62. Accordingly, all twenty guns, gleaming with oil and varnish, were sent off to the Shenandoah Valley. By Special Order No. 37 of April 29, 1862, Frémont created the 1st Battery of Ellsworth Guns. He designated Lieutenants August Otto, Francis Richard, Paul F. Rohrbacker, Sherman Underwood, and Louis Vonosky to report to Lieutenant Colonel John Pilson, Chief of Artillery, for duty as its officers. Otto was commissioned captain on May 10.

Because the battery was organized so late Frémont was compelled to obtain canoneers by detailing soldiers from other units; hence no muster rolls or returns exist. Various reports reveal that the orphaned outfit had many aliases, some of which are as follows:

- August Otto's Battery of Ellsworth Guns
- Ellsworth Guns Battery
- Battery of Ellsworth Guns, Virginia Artillery
- Frémont's Guns
- Frémont's Jackass Guns
- 1st West Virginia Battalion of Light Artillery
- 1st Battalion of West Virginia Light Artillery
- 1st Virginia Light Artillery
- 1st West Virginia Light Artillery
- Battery D

DURING Jackson's siege of Harpers Ferry in September 1862 Brigadier General Julius White stated in his official report that he had been verbally informed by Major Henry B. McIlvaine, Chief of Artillery, "That the entire amount of artillery at the post was 46 pieces, exclusive of seven small guns known as Ellsworth Guns." The *New York Times* listed a detachment of 12 two-inch rifles at Harpers Ferry, close enough to suggest their identity.

The *New York Times* narrative of the siege and capture of Harpers Ferry claimed that on September 13, "a detachment of Frémont's, more familiarly known as 'jackass' guns, was taken to Maryland Heights, and rendered valuable assistance." The guns were manned by Captain Acorn's Company I, 12th Regiment, New York State Militia. The same article listed forty-seven pieces of captured artillery plus mentioning "several pieces of Frémont's Guns of but little value." How many were really at Harpers Ferry, seven or twelve? Also, what happened to the remainder of the twenty guns sent to Frémont earlier that year? In any case, the Confederates captured all that were there.

THE next mention of the Ellsworth Guns occurred at Cane Hill or Boston Mountains, Arkansas on No-

Francis E. Hasselberger, a technical writer at the U. S. Naval Mine Engineering Facility at Yorktown, Va., is the author of numerous articles, in historical journals, dealing with the Civil War.

venber 28, 1862. According to an article on the 1st Kansas Battery, U. S., the Confederates had a small rifled cannon of about two-inch caliber that shot a lead projectile about the size and shape of an old-fashioned clockweight. The Rebel gunner who was handling this piece got the range on Rabb's 2d Indiana Battery and fired a projectile which hit one of the dismounted drivers and passed on through him and both of his horses, killing all three.

In the Confederate attack on Hartsville, Tennessee on December 7, 1862, General John Hunt Morgan reported he had in his artillery two Ellsworth Guns.

About March 26, 1863 General John C. Pemberton, C. S. A., sent some light breech-loading cannon to Port Hudson for use by General Richard Taylor at Alexandria, Louisiana. It is not known whether these were the same six Ellsworth Guns that were issued to the Trans-Mississippi Department sometime during the period of September 13, 1862 and January 31, 1863.

EARLY in 1864, Major Kingsbury, U. S. A., exiled to the Great Plains by U. S. Chief of Ordnance Ripley, told General Sully about the little cannon. Sully asked the Ordnance Department for some, adding: "From their description, I should judge that I could make good use of them in arming the block houses erected and about to be erected in the Upper Missouri River, and as an armament to the boats expected to be sent up the Missouri River from St. Louis next spring." However, the Plains Indians were safe from Thayer's little breech-loading cannon, none of which could be found at the Washington Arsenal.

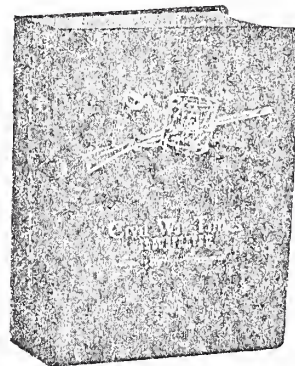
The last known appearance of the Ellsworth Gun was with the Confederate forces in their invasion of Missouri in the fall of '64. General Fagan's division had among his artillery one 1½-inch rifled gun, described as being used for picking off artillerymen, and it was said to be very effective. One thing is certain, it never got back to the Confederacy. All of Fagan's guns were captured at Mine Creek, Kansas, on October 25, 1864. Most of these captured cannon were sent to the St. Louis Arsenal by General Pleasanton.

So far as is known, none of the thirty-six Ellsworth cannon exist today. What happened to the only Union-manufactured breech-loading cannon?

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shotguns, and handcuffs. The Company employs five hundred and eighty hands. In March, 1878, the number was thirty-five. The product is shipped to almost every civilized country on the globe and the export business is increasing every year.

Iver Johnson & Company, established in 1871, were located at 44 Central Street, and employed two hundred hands. Their products were air pistols, guns, revolvers and other arms; ice and roller skates. This company moved to Fitchburg in 1891.

January 30, 1856, notice is found of a new rifle invented by B. F. Joslyn, the manufacture of which was controlled by Eli Thayer. It was claimed to be superior to the "Sharpe rifle," both on account of the rapidity of its loading and the simplicity, safety and cheapness of its construction. In March, 1859, the *Spy* said that Mr. Joslyn and Mr. Freeman, of New York, had purchased the large stone shop at South Worcester, where they expected to commence the manufacture of pistols under Joslyn's patent at an early day; and, in 1860, the War Department ordered from Mr. Joslyn one thousand of his rifles, which up to that time was the largest single order for fire-arms ever given to one contractor in the country. The Navy Department had previously ordered five hundred.

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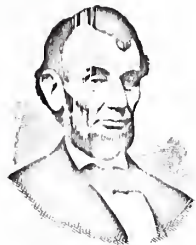
In April, 1861, they were busy day and night at the Lower Junction shop manufacturing Joslyn's breech-loading carbines for the War Department. Fort Sumter had then been fired upon and the demand for arms became pressing. All the iron-working establishments in the city were busy furnishing the Government with ordnance. Nathan Washburn was making five tons of rifle-barrel iron per day for the Springfield Armory, and was under contract to furnish one hundred thousand musket

barrels. Osgood Bradley was at work on gun-carriages and forges. Wood & Light were busy making machinery for the government at Springfield Armory. November, 1861, Shepard, Lathe & Co. were under contract for Colt, the Burnside factory and Springfield Armory. Allen & Wheelock had two hundred hands at work for the government and private parties. L. W. Pond was building twenty light rifle-cannon of his invention, called the "Ellsworth Gun," at the shop of Goddard, Rice & Co. This was a "breech-loading rifle-gun, four feet long, six inches in diameter at the breech and $3\frac{1}{2}$ at the muzzle, with a $1\frac{1}{2}$ inch bore, carrying a chilled conical ball weighing eighteen ounces, which it would throw three miles. The gun weighed, carriage and all, four hundred and fifty pounds. Cost, three hundred and fifty dollars."

July 11, 1862, a patent was granted to Theodore R. Timby, of Worcester, for improvements in a revolving battery-tower and improvements for discharging guns by electricity. Joslyn's breech-loading carbines were in high favor at this time with the government.

In 1862, Ball & Williams, in School Street, employed one hundred men in the manufacture of the Ballard rifle,—a cavalry rifle which they continued to make until the close of the war. This was a breech-loading arm, using a .42 metallic cartridge, and the invention of Mr. Ballard, who had been a foreman for them.

December 29, 1862, the invention of Stevens' Platoon-gun, invented by W. X. Stevens, of Worcester, was noticed. In April, 1863, Charles S. Coleman invented a breech-loading gun. September 6, 1865, the Green Rifle Works was at the Junction shop. January 15th, Ethan Allen & Co. were making from twenty thousand to fifty thousand cartridges per day.



Its name indicates its character

The Lincoln National Life Foundation

Fort Wayne, Indiana

MARK E. NEELY, JR.
DIRECTOR

November 4, 1974

American Antiquarian Society
185 Salisbury Street
Worcester, Mass. 01609

Dear Sir or Madam:

We are trying to find more information than is available in Robert Bruce's Lincoln and the Tools of War on the so-called "Ellsworth" cannons. These small, 1 1/2"-bore cannons were the only American-made rifled breech-loading artillery ordered by the United States government during the Civil War. They are, therefore, of some considerable significance to the history of technology. They are also of significance to Abraham Lincoln's career since he had a hand, as he did with many innovations in military technology, in getting them approved. They were manufactured by L. W. Pond in Worcester, Massachusetts, and Eli Thayer was apparently the agent who sold them to the government. A Colonel Kingsbury apparently approved their use for the army.

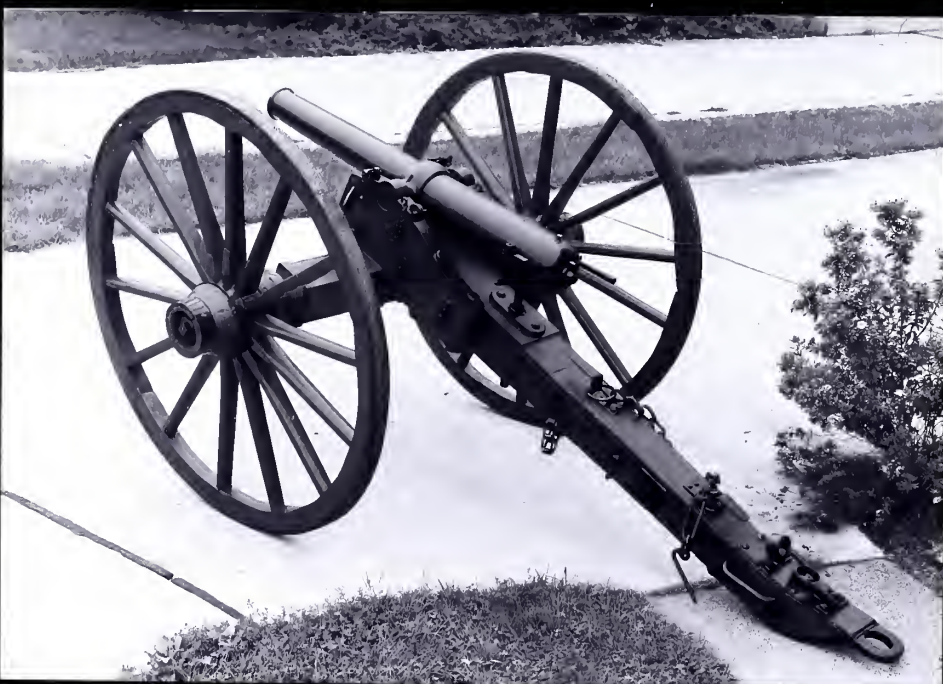
We are in great need of an accurate physical description or drawing of these guns. The Massachusetts Historical Society and the Smithsonian have thus far been unable to help. Do you have any shred of information on these guns or the people connected with their manufacture and sale? Do you know anyone who might know something about them? Anything you can do to help would be much appreciated.

Yours truly,

Mark E Neely Jr
Mark E. Neely, Jr.

MEN/jn

Dear Mr. Neely:
We are unable to offer any concrete leads for you other than to suggest checking the U.S. Patent Office Gazette for 1861 and 1862
F. E. Bauer, Jr.





Lincoln Lore

November, 1976

Bulletin of The Lincoln National Life Foundation...Mark E. Neely, Jr., Editor. Published each month by The Lincoln National Life Insurance Company, Fort Wayne, Indiana 46801.

Number 1665

“... one of the little breech-loading cannons I got of Hon. Eli Thayer.”

Editor's Note: Important credits for this issue go to Dr. Jack P. Covell, researcher, restorer, and owner of the piece under discussion; to Gary L. Delscamp, researcher and photographer; to Russell E. Thornton, who discovered the patent mark; and to Donald E. Thornton, who helped his father.

M. E. N., Jr.

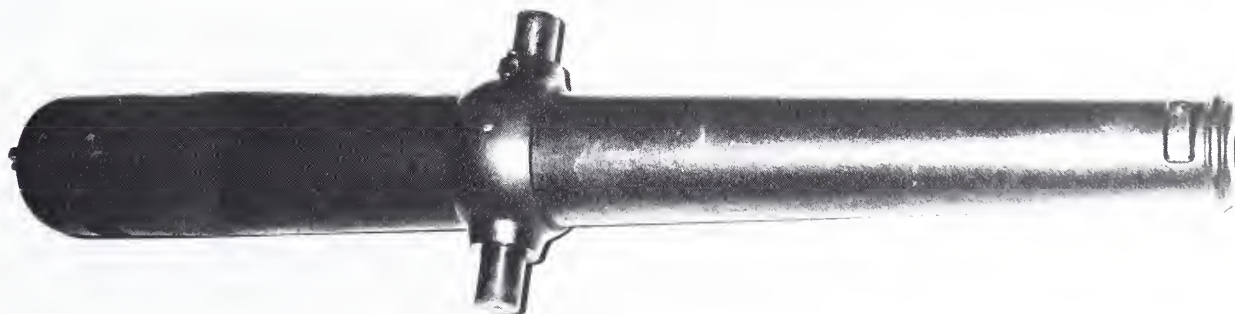
About a year before he won election to the Presidency, Abraham Lincoln asserted that the three discoveries and inventions of greatest value to the human race were “the arts of writing and of printing — the discovery of America, and the introduction of Patent-laws.” These were of crucial importance, he said, because they served to facilitate all other discoveries and inventions since. Probably only a few patent lawyers would still rate the introduction of patent laws on a par with the discovery of America and the development of writing and printing, but this serves well to reveal a peculiar trait in Abraham Lincoln's character: he was fascinated by technological innovations.

Lincoln's weakness for inventions would have large effects when he became President of the United States. The Army was of the mind that no invention could be developed fast enough to have any profound effect on the war at hand; therefore, it turned a deaf ear to the horde of inventors who descended on Washington with their various, curious, and sometimes efficiently lethal wares. These innovative Yankees quickly learned that their chances for a real hearing by the War Department were much enhanced if they could only get to Lincoln, persuade him of the merit of their schemes, and then be sent to the War Department with a request from the Presi-

dent that they be given a fair hearing. So much of this activity went on, in fact, that Robert V. Bruce managed to write one of the more ingenious (and lively) books in the whole field of Lincolniana, *Lincoln and the Tools of War*, in which he related the stories of dozens of inventions and their encounters with President Lincoln and the War Department.

Among those inventions the acceptance of which spoke well for Lincoln's ability to forecast the technological future, was a curiously elusive piece of artillery called, for no very good reason, “The Ellsworth Gun.” Muzzle-loaders and smooth-bores were very quickly a thing of the past after the American Civil War, and this little cannon was, therefore, a milestone in the history of American artillery: it was the only American breech-loading rifled cannon purchased by the War Department during the Civil War.

Unfortunately, the Ellsworth Gun was not as epoch-making in American military history as it was in the history of American technology. Fewer than fifty of the cannons were produced, and despite their association with some of the war's more colorful commanders, Elmer Ellsworth, Benjamin F. Butler, and John C. Frémont, they proved to be rather ill-starred in combat. A number were captured by the Confederates in the Shenandoah Valley campaign of 1862 against General Frémont, and others found their way to out-of-the-way and inglorious theaters of combat. As Professor Bruce puts it, “By 1863 all the Ellsworth guns had vanished into limbo or Dixie.” Until recently, none has been seen, but a candidate for being one of the long-lost little cannons has come to the attention of *Lincoln Lore*, and we are happy to have the exclusive right of reporting this find.



Courtesy G. L. Delscamp

FIGURE 1. This is a photograph of the recently discovered barrel of a small cannon. Taken just two months ago, it shows a small square hole near the breech in the lower left-hand corner of the picture. Two metal wedges and a tray to hold them have been removed to expose the holes. FIGURES 2 and 3 on page 2 show the breech before the wedges and other attachments were removed. Note the number “5” which appears on the trunnion, the metal sleeve around the middle of the barrel from which the cylindrical rods which rested on the carriage protrude.

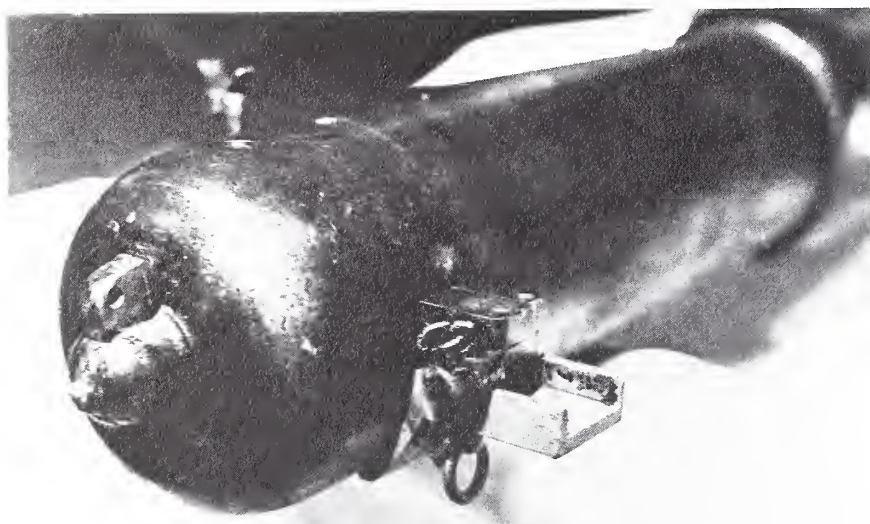


FIGURE 2. This photograph shows the right side of the breech. The two metal wedges rest one atop the other in the tray. The lower wedge had a handle which protruded parallel to the axis of the barrel. By pushing it away from the barrel, it caused the wedges to work against each other, loosen the interior breech mechanism, and finally slide out into the tray. The rings probably had chains on them which kept the wedges from being lost from the barrel.

All modern accounts of the Ellsworth gun, for which no patent models, drawings, or plans have ever been found, are based on Bruce's pioneering study, and here is the substance of that account:

Having bought manufacturing rights to B. F. Joslyn's new breech-loading rifle, the imaginative Yankee [Eli Thayer] applied the same design to a little breech-loading fieldpiece and sent a dozen specimens out to chastise the Kansas "border ruffians." In April 1861, when the conflict flared up again on a continental scale, Thayer sold two of his little cannons to the Union Defense Committee of New York, for the use of Elmer Ellsworth's Zouave regiment. Thereafter he called his cannon the "Ellsworth Gun."

This curious hybrid, somewhere between a Brobdingnagian rifle and a Lilliputian cannon, fell under Lincoln's interested scrutiny in September 1861. The gun Lincoln saw

Courtesy G. L. Delscamp

was four feet long, had a 1 1/2-inch bore and weighed about three hundred pounds without its carriage. Like the Joslyn rifle, its breech mechanism consisted of a cone and expanding rings, held in place by a tapered steel key which passed through the shank of the breech and was operated by a compound lever. A handle opened the breech piece. The conical chilled-iron ball, wound with tallow-soaked cord, fitted into a cup at the end of a brass cartridge; and the 3-ounce charge was ignited through perforations near the other end. Instead of a limber, the carriage had a drag rope attached for hauling by manpower.

Thayer made much of the gun's maneuverability, cheapness and rapidity of fire; and Lincoln at last consented to order twenty guns at \$350 each, subject to the inspection of McClellan's chief ordnance officer . . .

From 1863, when the cannons disappear from the official re-

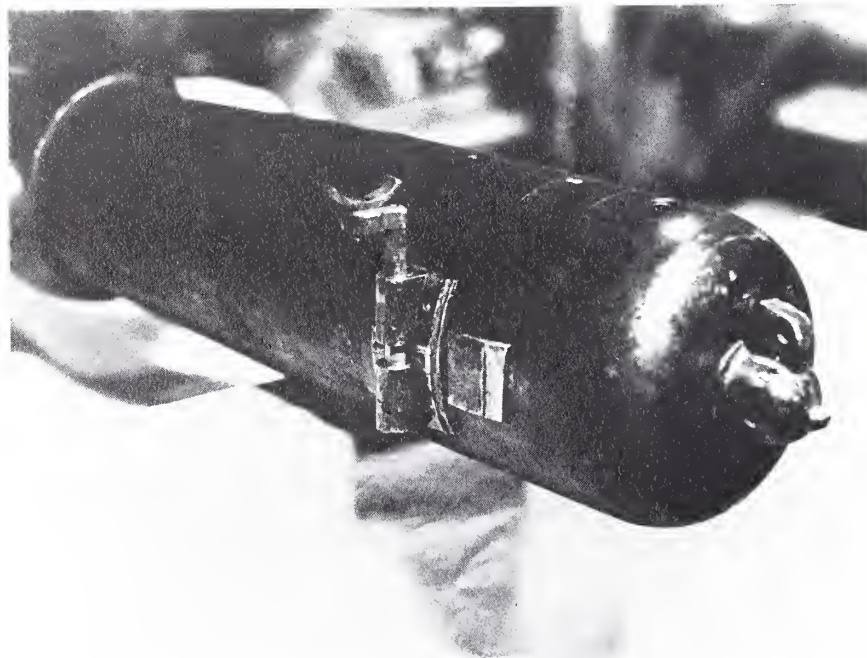


FIGURE 3. This is the left side of the breech. The two wedges protrude slightly above the surface of the barrel, just behind the device which must have cradled a sight of some sort. The bore of the rifled cannon was so small that it fired a very small projectile which could not have been very destructive and had, therefore, to be accurately placed. The hole above the breech is a mystery, but it may have held a level. Since the rifle had a range of three miles, it doubtless had to have a telescopic sight on it.

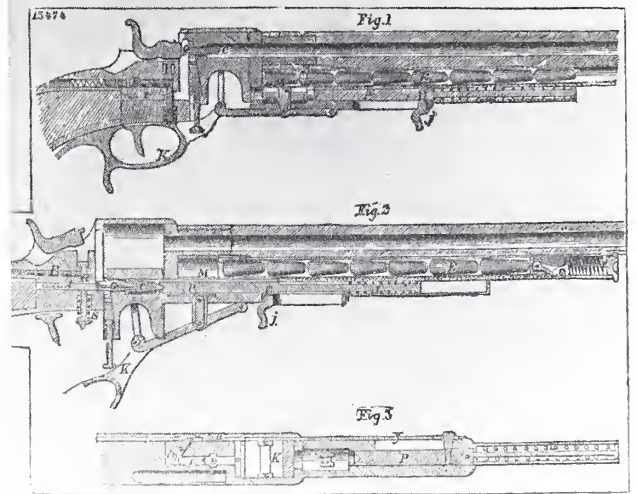
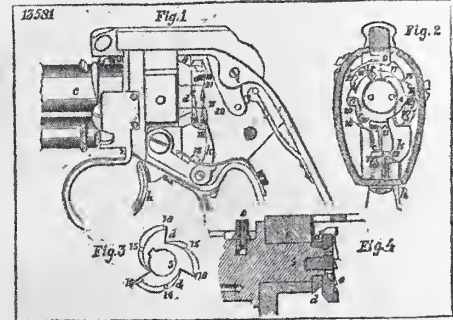
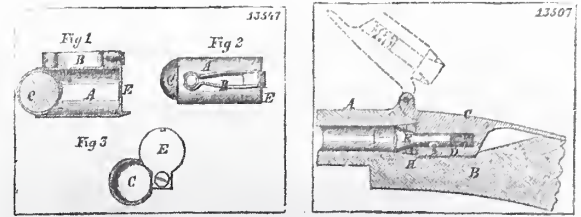
Courtesy G. L. Delscamp

cords, until June, 1974, when a cannon barrel was purchased by two gun collectors from a man who had acquired it to decorate his rock garden, there has been no evidence of the Ellsworth cannon. The barrel in question did not provoke much interest at first. The two gun collectors made a five-minute examination, decided that the little piece must have been the sort used to throw lines of rope from distressed ships to shore or *vice versa*, and within half an hour sold the barrel to a local firearms dealer as a curiosity or advertising piece for his store. The dealer had the barrel for six days. He removed some of the coat of thick black paint which covered the barrel and found a patent mark. Having been in the gun business for thirty years, the dealer had acquired some standard references on the history of weapons. Checking *The Breech-Loader in the Service*, he found the patent date listed there and realized that he had probably acquired a breech-loading Civil War piece rather than a line-throwing gun. He had no reason to believe that these were not produced by the thousands and happily sold the gun for about 700% profit to two men who frequented his shop.

These two men, Dr. Jack Covell and G. L. Delscamp, were better equipped to evaluate the significance of the little field-piece. Dr. Covell is a gun collector with a solid technical knowledge of the practical workings of firearms, though twentieth-century weapons are his specialty. Mr. Delscamp is a recent college graduate with a degree in history and an ability to find his way around a library. Between them, they decided that the cannon barrel was no ordinary piece from the standard arsenal of Civil War weapons but the rare Ellsworth cannon, and they went to work to clean up the gun and prove their point. This work has taken two years of incredible efforts in garages and machine shops. Along the way, Mr. Delscamp lost interest and sold his share to Dr. Covell, who has continued the machine-shop work and the thankless process of writing and telephoning experts in the history of weaponry. Of course, there can be no real expert on a gun no one has ever seen so much as a picture of, and these efforts have not been altogether successful. Moreover, the desire to keep the barrel in good shape for posterity and the limited means available to an ordinary citizen who does not own a foundry have prevented exerting the kinds of force and violence on the piece that might open it up and prove the way its mechanism works. Nevertheless, the evidence for Dr. Covell's little cannon is substantial.

The dimensions seem to fit the existing word descriptions of the Ellsworth Gun. The barrel weighs around 290 pounds, is four feet long, and has a 1 1/2-inch bore. It is no line-throwing gun because the barrel is rifled, and the spin imparted by rifling would only serve to snarl a rope flying through the air. Although the breech plug is apparently firmly shut with rust and corrosion and the breech has not yet been opened, the cannon must be a breech-loader. Otherwise, there is no reason for the presence of the curious-looking compound wedges which protrude from the side of the piece and penetrate through the other side. These wedges operated by a handle which, though broken off and stuffed in the muzzle (along with a lot of rocks, debris, and what looked like red Georgia clay), extended parallel to the axis of the barrel from the circular protrusion on the breech-side of the upper wedge. Strenuous efforts have caused these wedges to move and, in fact, be removed from the cannon. But they did not do what doubtless they were meant to do before the breech plug rusted, force the breech plug out so that the barrel could be loaded from the rear.

All of these pieces of evidence might add up only to the fact that the barrel is that of a small old rifled cannon with a curious system of wedges near the breech. The important piece of evidence, however, is that patent date which first made the gun dealer realize he had something more than a seacoast curiosity. Stamped on the breech near the protruding plug is:



From the Lincoln National Life Foundation

FIGURE 4. This page from the plates of the *Report of the Commissioner of Patents for the Year 1855* contains the diagram of the B. F. Joslyn patent in the upper right-hand corner.

PATENTED
AUG. 28TH, 1855

A check of the *Report of the Commissioner of Patents for the Year 1855* reveals that only one patent was issued on that date for a firearms device. It was patent number 13,507, issued to B. F. Joslyn for an "Improvement in Breech-loading Firearms." It was the Joslyn patent which Eli Thayer purchased and adapted for use in a small rifled cannon.

In a letter to President Lincoln written on September 21, 1861, Thayer advised the organization of companies of soldiers armed with twenty of these weapons, which, he claimed, combined the advantages of artillery and infantry rifles. So light in weight (he claimed they weighed in at something like 200 or 225 pounds — quite an underestimate) that they could be pulled into place by men rather than horses and so small that they could be placed anywhere a rifleman could, the Ellsworth Guns nevertheless fired a seventeen-ounce ball a distance of three miles (at three degrees elevation), that is, artillery and not infantry range. Moreover, only a small number of men was required to operate the guns (he did not say precisely how small a number), and they could easily get off twenty rounds per minute. Thayer gave as his address Wil-



Courtesy G. L. Delscamp

FIGURE 5. This close-up photograph of the muzzle shows the rifling (visible at the edge of the shadows at the lower right of the bore).

lard's Hotel in Washington, and he had doubtless come down from Massachusetts to lobby for the purchase of the Ellsworth cannon — at what he claimed was a very low price, especially when compared to ordinary field artillery.

Thayer, an ex-Congressman and a maverick Republican who had voted for Lincoln's nomination at the Wigwam, had some influence. Three days later Lincoln drew up a memorandum for purchase of "twenty guns, . . . made equal, or superior to the Ellsworth gun" at \$350 each. Lincoln noted that the gun had recently been exhibited to him. The twenty cannons were

manufactured in Thayer's home town, Worcester, Massachusetts, by L. W. Pond at the factory of Goddard, Rice & Company. Some improvements were made on the model Lincoln had seen, because Charles Kingsbury, who examined the guns in November for the Army, reported that the "cannon rifles" were superior to what he had seen before with Lincoln. The improvements were wide-ranging enough for L. W. Pond to claim that the cannon was his own invention, or so, at least, *The Scientific American* reported in December.

The barrel under discussion here has no other identifying marks than those already mentioned — except the numeral "5" which appears in five different places on the barrel. This numeral, if a serial number, is consistent with the small number of cannons known to have been produced. While in itself it provides no conclusive evidence, it at least does not have to be explained away, as a higher number, in the hundreds, say, would have to be. The device on the side of the breech opposite the wedges is not mentioned in any of the literature on the Ellsworth Gun, but it might be a part of a sighting device, perhaps added as an improvement by L. W. Pond.

The positive proof of the identity of the barrel still lies immobile in the breech. Only the system of rings, pin, and cone will provide sure identification for the Ellsworth Gun, for it is distinguished by its B. F. Joslyn-patented breech device. From all other outward appearances, however, this could well be the long-lost Ellsworth cannon. If it is, it is a significant artifact for Lincoln students (as well as military historians and students of the history of American technology). Abraham Lincoln seems to have been very keen on the little cannon's possibilities, and when a Mr. Hegan visited him later, the President instructed Colonel George D. Ramsay to "show him one of the little breech-loading cannons I got of Hon. Eli Thayer." It was quite an innovative piece of weaponry, and President Lincoln had personally seen to its acceptance by the Army, even to the point of drawing up the terms of the contract and, on December 3, 1861, signing the manufacturer's bill for \$8811.87, "I advise that the above account be paid. A. Lincoln."



Courtesy G. L. Delscamp

FIGURE 6. The all-important patent mark appears, alas, in an awkward place. It is just above the breech plug. Early owners of the barrel apparently damaged the mark in trying to remove the plug. The "T" is partly obliterated, as is most of the "8"; however, the beginnings of both of the loops in the "8" are visible on the side near the "2".

SEPTEMBER 30 1981

DEAR MR. NEELY,

IN THE EARLY PART OF THE SUMMER I PROMISED I WOULD SEND YOU PICTURES OF MY ELLSWORTH CANNON RESTORATION. ONE OF YOUR SUBSCRIBERS, JOHN FARMER, TOOK THE ENCLOSED PHOTOGRAPHS.

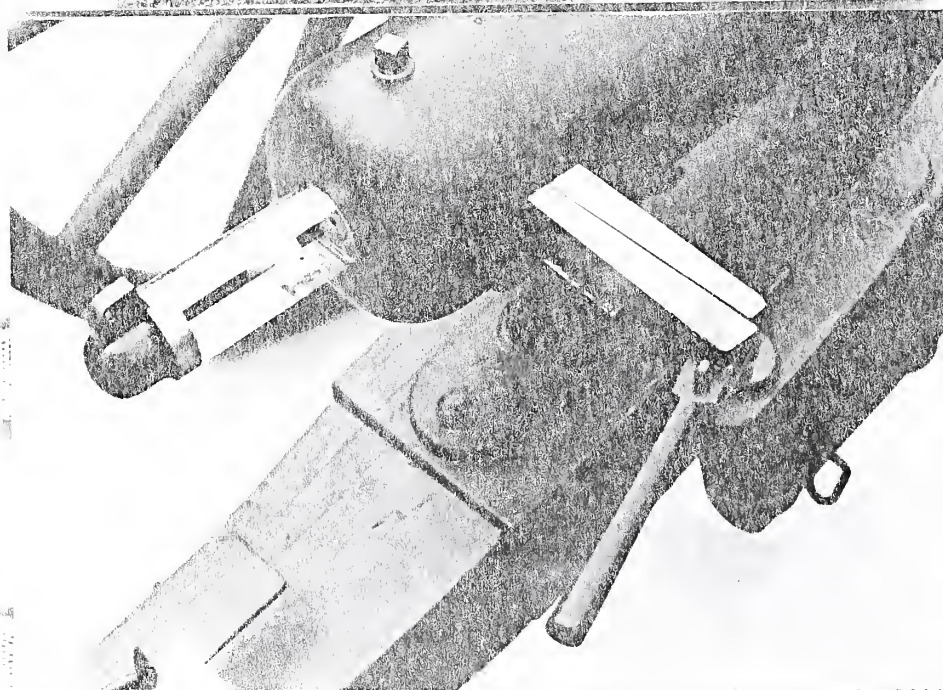
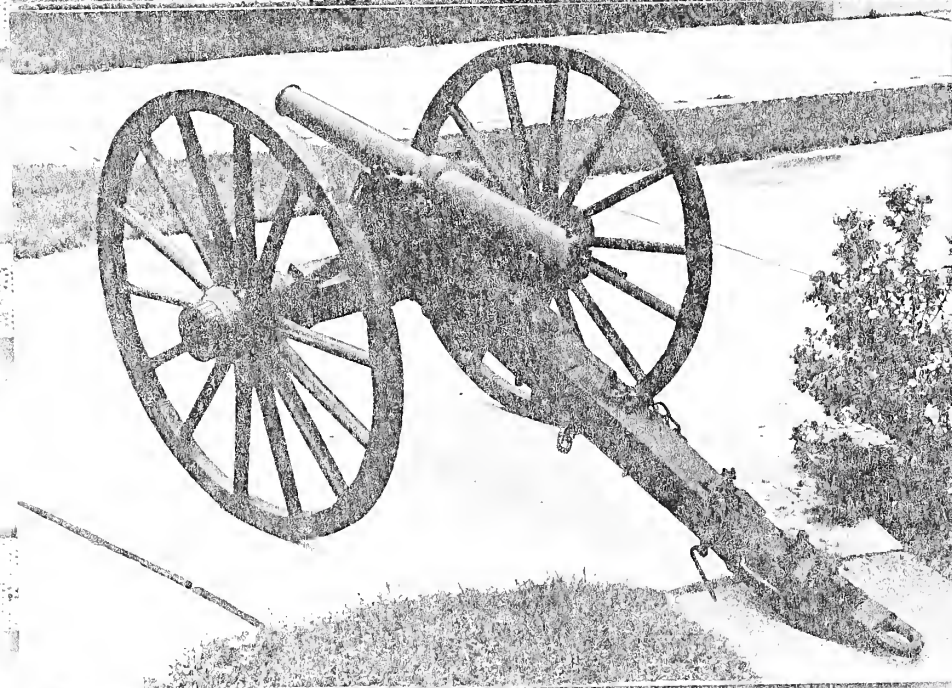
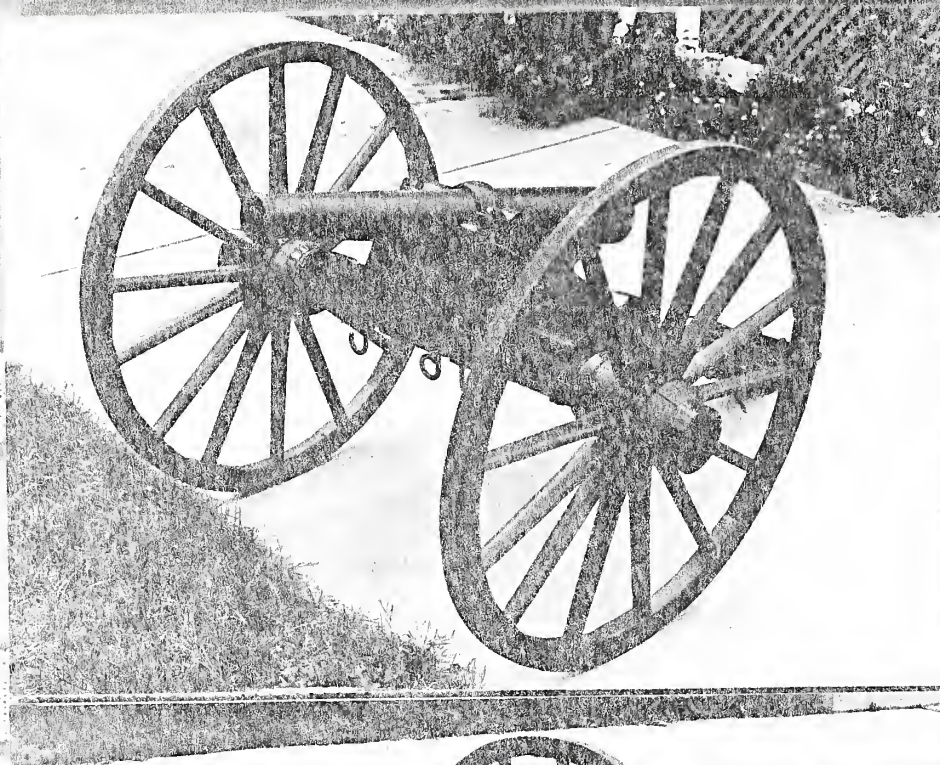
THE GUN IS MOUNTED ON A REPRODUCTION U.S. MOUNTAIN HOWITZER PRAIRIE CARRIAGE. SINCE NO ELLSWORTH CARRIAGE INFORMATION HAS COME TO LIGHT, THE PRAIRIE CARRIAGE WOULD HAVE BEEN THE MOST OBVIOUS ONE FOR ELLSWORTH USAGE. ALSO OF INTEREST, SEVERAL PROJECTILES HAVE BEEN RECOVERED THAT ARE THOUGHT TO HAVE BEEN FOR THE ELLSWORTH.

I HAVE DISPLAYED THE GUN AT CIVIL WAR SHOWS IN OHIO AND MICHIGAN. IT HAS BEEN RECEIVED WITH INTEREST. I HAVE NOT BEEN ABLE TO CONTACT THE ELLUSIVE DR. COVELL TO BLUE-PRINT HIS SIGHT BASE. I HAVE INCLUDED A COPY OF INFORMATION I HAVE LOCATED. IF YOU USE IT PLEASE CREDIT MY SOURCE. I THINK WHAT LITTLE SERVICE THEY MIGHT HAVE SEEN WAS MOSTLY IN CONFEDERATE USAGE.

IF YOU COME UPON ANY MORE INFORMATION OR THE DOCTOR, PLEASE LET ME KNOW.

SINCERELY,

Ken Bauman



Ellsworth Source Information

"I left these headquarters at 10 a.m. on the 6th instant...
(December, 1862) ... and two rifled Ellsworth guns belonging
to my own command."

Report of Brig. Gen. J.H. Morgan, December 9, 1862
O.R. Ser. I Vol.XX Pt.I page 65

"Inventory of ordnance and ordnance stores captured in the
city of Columbia, South Carolina, February 17, 1865

Breech-loading gun (caliber 1½ inch) 1 (at arsenal) "

Report of Bvt. Col. T.G. Baylor, Chief Ordnance Officer
April 7, 1865. O.R. Ser. I Vol. XLVII Pt. I page 181

"Issues to Trans-Mississippi Department from September 1, 1862,
to September 15, 1864.

From Sept. 1, 1862 to Jan. 31, 1863- Ellsworth guns 6 "

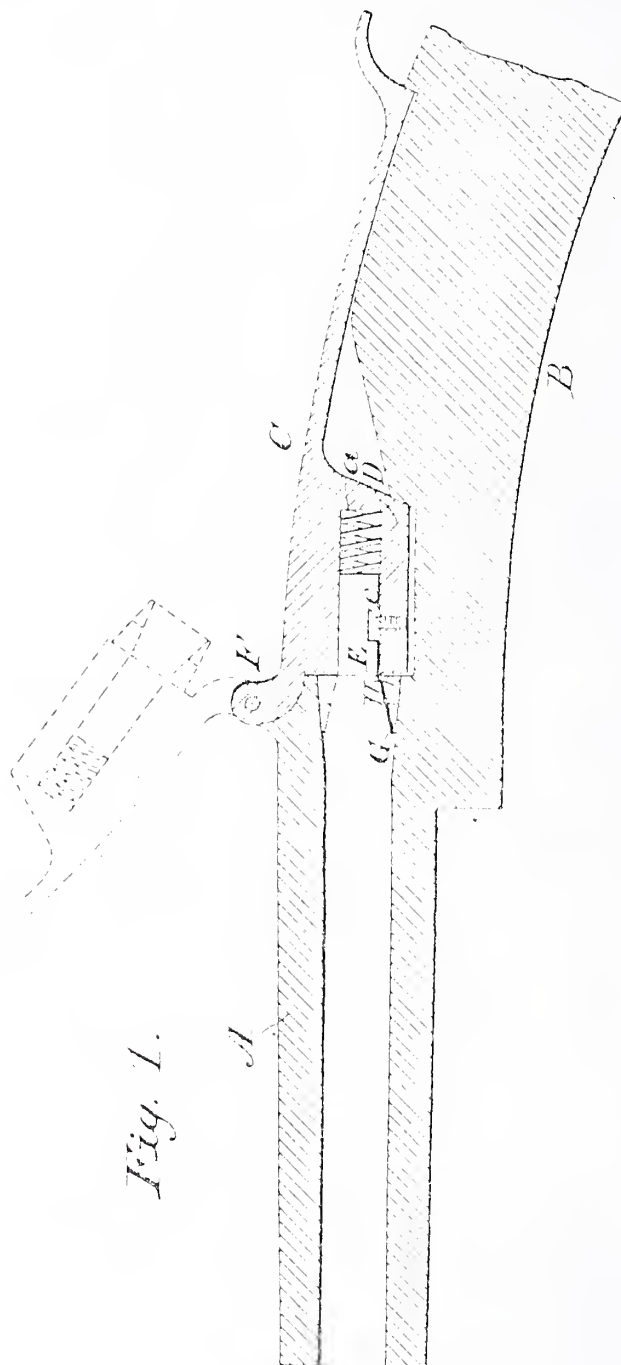
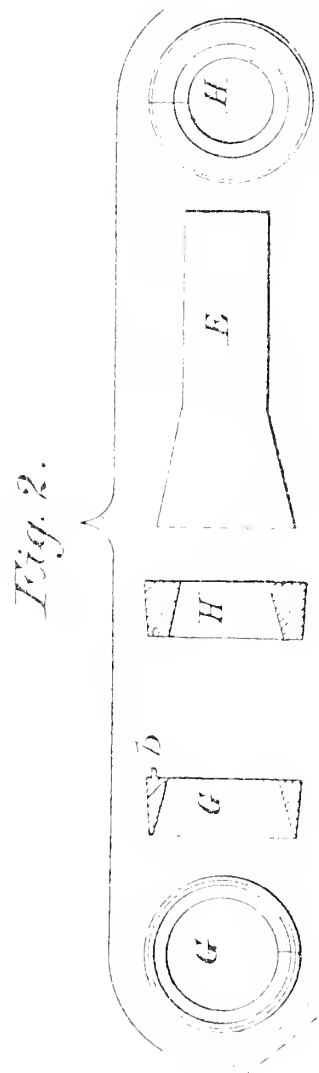
Report of Col. J. Gorgas, Chief of Ordnance September 24, 1864
O.R. Ser. I Vol. XLI Pt.II page 1058

B. E. Joslyn

Breach Loading Firearm

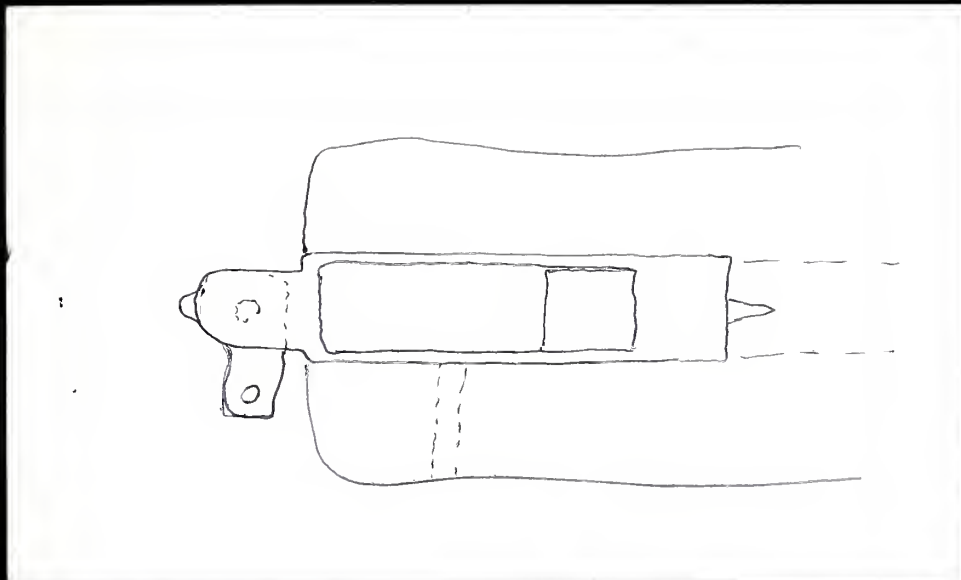
No. 13,507.

Patented Aug. 28, 1855.



Witnesses:
Henry Holston
William E. Walton

Inventor:
B. E. Joslyn

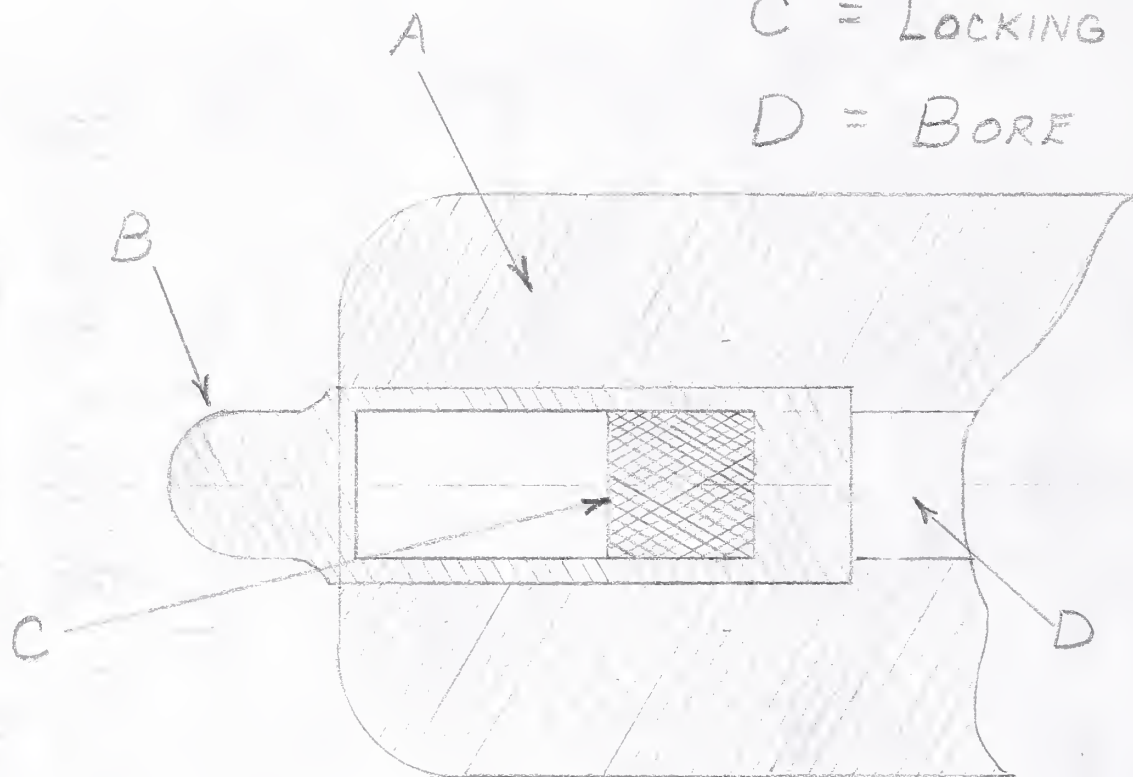


A = BARREL

B = BREACH PLUG

C = LOCKING WEDGE

D = BORE



17 = 17 1/2 1/2 1/2

Shingle Target.

The Spencer Carbine was invented by Christopher M. Spencer, now living at Windsor, Conn. He is considered one of America's greatest inventors. He is also the inventor of the Spencer Repeating Shot Gun, of which we were the makers. The carbine bearing his name, was invented when he was only 19 years old. When the Civil War broke out Spencer went to Washington to show up his gun and try to obtain an order for its manufacture. But army officers were very busy and were overrun with inventors and had no time to see "the young man with his gun." While waiting around the corridors of the War Office, Spencer made the acquaintance of one of the doorkeepers or messengers, to whom he showed his gun and related his disappointment, and that he was discouraged and was about to return home. The doorkeeper said, "You come here after I am through for the day and I will take you to a man who will examine your gun." His friend took him direct to the White House and introduced him to President Abraham Lincoln. Young Spencer showed the workings of the gun with the dummy cartridge, when the President said, "It works all right, but the proof lies in the shooting; let's go out and shoot it." So they started for the grounds attached to the White House. On the way the President noted that the pocket of his coat was torn and asked for a pin, remarking, "This is a nice dress for the Chief Magistrate to appear in public." Setting up a shingle against a tree a few shots were fired by Spencer, who handed the gun to the President, who fired a few shots, not making quite as good target as Spencer, gave the gun back for further shooting, saying, "When I was your age I could do better." The target shingle is now at the State House in Indianapolis, presented by Mr. Spencer after the death of the President. Needless to say that Mr. Spencer returned home with an order for all the guns he could furnish. A company was formed and 94,000 guns were delivered for use in the Civil War. Jas. G. Blaine was a stockholder in the Spencer Arms Company; Fisher, to whom Blaine wrote "Burn these letters," was its treasurer.



Target used by Lincoln when he personally tested and approved the Spencer in August of 1863. (Only then was the rifle widely adopted by Union forces.)

This is a story of a rare little Cannon. The story begins 115 yr ago in an iron foundry in Worcester, Mass.

On Sept 24, 1861 this little cannon and 19 others like it were ordered by a very famous man, President Abraham Lincoln. All twenty were delivered to Pres. Lincoln in late Nov 1861 and were stored in the Washington Arsenal until the spring of 1862. At that time General Fremont asked for and was given the 20 little cannons for his Shenandoah Valley campaign. Some or all of these guns were used in the battle of Harpers Ferry.

(2)

in Sept 1862 and were captured by General Stonewall Jackson with the surrender of the Union Forces. From Sept 15, 1862 until June 15, 1974 the history of this little cannon is completely unknown.

The modern story of this little ~~cannon~~^{gun} begins in a midwestern state on June 15, 1974. It was ^{in a garage sale} purchased by 2 antique gun collectors as a curiosity item. After a 5 min examination the 2 collectors determined that their purchase was a \$ line-throwing gun of a much later date and ~~was~~ thus was of little value to them. Within 30 min it was sold to a local

gun dealer as a conversation piece for his store. During the next six days the barrel was partially cleaned (it was covered by a thick layer of black paint) During this cleaning and examination some letters and numbers were discovered on the breech. They turned out to read.

PATENTED
AUG. 28TH, 1855

The store owner then researched that date and discovered it to be the exact day of the B. F. Joslyn patent for a breech loading rifle mechanism. Further research by my partner and myself

discovered
~~determined~~ that this patent was
purchased by ^{the} Hon. Eli Thayer of
Worcester, Mass. in the late 1850^s and
that a ^{few} small breech-loading cannons ^{utilizing the gasless patent}
were manufactured by him at ~~this~~ time.

^{in early 1861}
Mr Thayer sold two of the cannons to the
famous Elmer E. Ellsworth of New York
for ^{use in} his equally famous Zouave Regiment.
From this man the name of this little
cannon is derived, the "Ellsworth Gun",
one of the most rare of the Civil War
artifacts. Until 1974 there were no known
pictures, patent drawings, detailed descriptions,
etc. of the Ellsworth Gun and none were
known to be in existence.

On June 1974 a partner and myself purchased the cannon from the local dealer and immediately began the long process of researching and restoring the item. Our first task was to ~~open~~ clean out the inside of the barrel which was about three-fourths full of dirt and sand. ~~and~~ This debris was packed solid so the removal consisted of digging it loose with steel rods and then irrigating it away with a garden hose. About 15 inches down the barrel we discovered the tip of a iron rod running parallel with the axis of the barrel. As more of the debris was removed the iron rod was loosened and extracted along with small stones pieces of rotted wood, ^{and} red colored dirt. ~~The iron~~ Although the iron rod appeared be nothing more than a rusty piece of scrap metal, it turned out to be a very important find. This 7 inch cylindrical shaped piece of iron was ~~discovered~~ discovered to be the

handle which operates the two compound wedges on the right side of the ~~barrel~~ ^{breech}. The handle had be broken off (much force must have been used as the fracture site was $\frac{5}{8}$ inch in diameter.) and pushed down the barrel along with ~~the other debris~~ and stones, dirt, and wood (possibly a broken ram rod) in a deliberate effort to spike this gun.

The second task was to clean the external surface of the cannon. The entire surface including the last 2 inches of the bore was covered with a thick black paint ^{which sealed}. Every crack and screw ~~was sealed~~ ^{by the paint}. Paint remover and light scraping soon removed ~~the~~ ^{majority} most of the paint from the accessible areas but the cracks and screws remained sealed. Two screws in the brass plate on the left side were broken off at the surface. Penetrating oil and an impact screw driver removed the other

two screws. Oil and a socket wrench ~~removed~~ loosened and removed the two bolts that held the wedge tray on the right side of the gun. A small curved plate ^{near} the muzzle could not be removed and is still in place 2 years later. During the cleaning of the barrel and its parts, the same number was found in five different ~~places~~ places.

The third task was to get the breech mechanism opened and operating. This proved to be extremely difficult and time consuming. The breech was placed in a bucket of diesel oil for more than three months. Several different commercial ~~rust~~ oils and loosening solvents were used but the breech remained "frozen" shut. After about 6 months we discovered that oil placed in the cracks on the left side of the wedges would seep through to the right side in about 36 hours. Also the oil poured into the hole ~~on the top~~ (purpose unknown) on the top of the breech would drain out both at

Early in 1975 my partner
became disappointed and
disinterested and sold his
share to me

the bottom of the breech plug and
at the end of the wedges. Even
with tapping on aluminium blocks
and continual oiling, the breech
remained solid. ~~The~~ ^{exactly} continual
problem was ~~show~~ the breech
mechanism operated. Did the wedges
lock the breech plug and "cones"
in place or did the breech plug
lock the wedges in position.
Had we known for sure we could
have better used what ~~for~~ force
we had on the part that moved
first. After ~~a period of~~ 1 1/2 years
of soaking and tapping with no
results ~~but~~ I was able to
obtain some industrial X rays
and also gained access to a
machine shop. This was my first
big break.

~~the~~ ^{industrial} On the spring of 1976 the
X rays were taken. The following
is a brief description of each X ray.

- #1 40 min exposure. Film was over-exposed indicating the material in the cannon was not as dense as expected. The film did suggest a cavity in the breech. (This ^{cavity} was ~~not~~ suspected as oil could be pour into breech faster than it ran out.
- #2 32 min exposure. Breech cavity ~~positive~~ confirmed
- #3 23 min exposure
- #4 15 min exposure Breech cavity and breech plug examined in detail
- #5 8 min exposure. Underexposed
- #6 11 min exposure. This view was a side shot and revealed that the top of the hollow breech plug had been forced down against the top of the wedges.
- #7 15 min exposure. Film showed the wedges with ~~a~~ the suspected cones and rings ahead of them.

After ~~studying~~ examining the x-ray it was decided that the wedges held the breech plug in place and therefore must move first. ~~A~~ ~~First~~ A special tool had to be made to elevate

the top piece of the breech plug that was resting on top of the wedges. (revealed in X-ray) #6 This was accomplished by working through the hole in the top of the breech. Also a special ~~built~~ large clamp was designed and built so that great pressure could be applied to the ends of the wedges over a prolonged period of time. These two tools were finished within a month ~~and were~~ and were applied to the breech. After elevating the bent piece, the clamp was applied. About 1 month passed without results but finally on a Wednesday afternoon in ^{late} May after tightening the large bolts and tapping, a squeak was heard and oil squirted from the right end of the wedges. They had moved about a $\frac{1}{4}$ of an inch, probably for the first time in over 100 years. In 30 more minutes the wedges were removed intact from the breech.

My attention immediately turned to the breech plug but it too was "frozen". Moderate tapping failed

to change this situation. Again another special long clamp had to be built that could apply the continuous ~~per~~ pressure to the face of the breech plug.

The first long clamp broke so another one was designed.

This ~~second~~ clamp has been in place for over a month but has failed to move the plug. As of this writing the breech plug is still "frozen" in the same position it has occupied for the last 100 years.

Work is continuing but alas,

"little breech loading cannon" ~~is~~ remains as formidable opponent ~~to~~ as it did ~~in 1862~~ to General Jackson in 1862.

The officers of my staff, Major Dickson, inspector of artillery; Captain Marshall, assistant adjutant-general; Captain Merritt and Lieutenant Verplanck, aides-de camp, at all times performed cheerfully and well the duties with which they were charged.

I am, general, very respectfully, your obedient servant,
WILLIAM F. BARRY,

Breret Major-General, Chief of Artillery.

Maj. Gen. W. T. SHERMAN,
Commanding Military Division of the Mississippi.

[Indorsement.]

HQRS. MILITARY DIVISION OF THE MISSISSIPPI,
In the Field, Goldsborough, N. C., April 7, 1865.

This interesting report of the artillery arm is forwarded, and I cordially indorse all that General Barry states as to the efficiency of the artillery and the good care taken of horses and guns. Some substantial reward should be devised for artillery officers, who seem almost debarr'd promotion.

W. T. SHERMAN,
Major-General, Commanding.

No. 7.

Reports of Bvt. Col. Thomas G. Baylor, U. S. Army, Chief Ordnance Officer.

HQRS. MILITARY DIVISION OF THE MISSISSIPPI,
ORDNANCE OFFICE,
Goldsborough, N. C., April 7, 1865.

Maj. Gen. W. T. SHERMAN,
Comdg. Mil. Div. of the Mississippi, Goldsborough, N. C.:

SIR: I have the honor to inclose herewith a report of all ordnance and ordnance stores captured from the enemy in the campaign commencing February 1, 1865, and ending March 23, 1865. All of these stores were thoroughly destroyed except two Blakely rifle guns, one 20-pounder Parrott, and one 12-pounder mountain howitzer, which were brought along by the army as trophies. I inclose also a list of the expenditures of ammunition by the army during the campaign.

Very respectfully, your obedient servant,

T. G. BAYLOR,
Captain of Ordnance and Bvt. Lieut. Col., U. S. Army.
Chief of Ordnance, Military Division of the Mississippi.

[Inclosure No. 1.]

Inventory of ordnance and ordnance stores captured in the city of Columbia, S. C., February 16 [17], 1865.

Articles.	Citadel.	Magazine.	Arsenal.	Total.
Ball cartridges (no caps).....	580,000	620,000		1,200,000
Percussion caps.....	100,000			100,000
Rifle powder (kegs).....pounds		13,600		13,600
Cannon powder (kegs and boxes).....do.		8,750		8,750
Mead powder (kegs and boxes).....do.		3,800		3,800
Total powder.....				26,150

Inventory of ordnance and ordnance stores, &c.—Continued.

Articles.	Citadel.	Magazine.	Arsenal.	Total.
Case shot, fixed, 12-pounder gun.....		183		183
Fuse shell, fixed, 12-pounder gun.....		236		236
Grape, 12-pounder gun.....		460		460
Canister, fixed, 12-pounder gun.....		148		148
Total 12-pounder gun projectiles.....				1,027
Shot, fixed, 6-pounder gun.....		1,680		1,680
Case, fixed, 6-pounder gun.....		550		550
Fuse shell, fixed, 6-pounder gun.....		372		372
Canister, fixed, 6-pounder gun.....		1,250		1,250
Total 6-pounder projectiles.....				3,852
Shot, fixed, 24-pounder gun.....		112		112
Shell, fixed, 24-pounder gun.....		120		120
Canister, fixed, 24-pounder gun.....		314		314
Total 24-pounder projectiles.....				546
Shell, fixed, 8-inch.....	64			64
Shot and shell, not fixed, 8-inch.....			2,280	2,280
Total 8-inch projectiles.....				2,344
Shot and shell, not fixed, 10-inch.....			1,320	1,320
Total artillery projectiles.....				9,069
Yager muskets.....	960			960
Palmetto rifles.....	500			500
Remington rifles.....	100			100
Mississippi rifles.....	200			200
U. S. muskets, caliber .69.....	1,740		1,700	3,440
Enfield rifled muskets.....	1,200		700	1,900
Enfield rifles (short, sword bayonet).....			2,000	2,000
Austrian rifled muskets (old).....	60		500	560
Whitney rifles (old).....			50	50
Springfield rifled muskets.....			100	100
Morse rifles (South Carolina).....	400			400
Total muskets and rifles, serviceable.....				10,210
Musket barrels and stocks, unfinished.....			(Armory.) 6,000	6,000
Pikes.....	4,000			4,000
6-pounder guns (bronze).....	10			10
6-pounder guns (iron).....	2			2
Blakely guns (rifled, iron).....			4	4
James guns (rifled, bronze).....		2		2
12-pounder mountain howitzers.....		3		3
3-inch gun (rifled, iron).....			1	1
10-pounder gun (iron).....			1	1
10-pounder gun (rifled, iron).....			1	1
15-pounder gun (rifled, iron).....			2	2
18-pounder gun (re-enforced, iron).....			1	1
4-inch rifled gun (iron).....	1			1
4-inch mortars.....	2			2
1 [10]-inch Coehorn (bronze).....	1			1
Bronze guns (caliber 1½ inch).....	2			2
2-pounder gun (bronze).....	1			1
Repeating battery (caliber 1 inch).....	1			1
Breech-loading gun (caliber 1½ inch).....			1	1
10-pounder Parrotts found and destroyed by General Hazen.....				2
Total guns.....				43
Gun carriages.....	3	2	4	9
Gun caissons.....		4	10	14
Mountain howitzer caissons.....			3	3
Forges.....	1	1		2
Sponges and rammers.....	1,000		125	1,125
Blacksmith vises.....	20			20
Anvils.....	11			11
Artillery harness.....sets..	8	30		38
Naval cutlasses.....		175		175
Artillery sabers.....		220		220
Cavalry sabers (all kinds).....	400	2,300		2,700
Total cutlasses and sabers.....				3,095

General William T. Sherman took Columbia on Friday, February 17, 1865. He promptly burned it. What wouldn't burn, he blew up. There wasn't much left of the Palmetto Iron Works when Uncle Billy moved on, but a picture was taken of the ruins.

Let Glaze himself tell what happened.

I witnessed the burning of Columbia. I know that the city was destroyed by Gen. Sherman's army, because they were in the city at the time, and I saw persons in the uniform of the United States soldiers setting fire to the city in various places. I saw two such persons fire Mr. Phillips' auction warehouse. They opened the door and threw balls, which they had set on fire, into the building, and in less than twenty minutes the building was in flames. This building was diagonally across from the petitioner's store. It occurred about 7 o'clock, P.M. All that part of the city caught directly after that—in about one-half of an hour. I saw several other houses fired, and among them my own building. I am speaking now of what I saw myself. I saw a building back of the old City Hotel fired by balls by persons wearing similar uniforms, whom I know to be United States soldiers, for they came into my own house. They burned my machine shop. There were about one hundred soldiers there at the time. They broke up the machinery and then set fire thereto; not, however, by balls as aforesaid, but by the broken boxes, etc. and oil poured on. In the course of a half an hour the conflagration became general. Most of the burning was done from that time until about 3 o'clock next morning. I was a member of the city council at the time, and went with the mayor to Gen. Sherman, when Gen. Sherman promised the mayor that there would be no burning that night. I saw no efforts on the part of the United States soldiers to subdue the fire; but, on the other hand, I saw them endeavoring to spread it, and heard some of them remark that it was not half enough. It was on my way home from our conference with Gen. Sherman that I saw Mr. Phillips' warehouse fired. I saw a sky-rocket sent up from the State House yard, where the headquarters of Gen. Sherman were,

which I took to be the signal for the burning of the city, for immediately thereafter the fire burst out all over the city. Soldiers had been stationed at different points in the mean time.

Signature/W. M. GLAZE

Sworn to and subscribed before me, this 18th day of March, A. D., 1872.

ALBERT M. BOOZER,
U.S. Commissioner for District
of South Carolina.²⁰

The subordinates of Brevet Lieutenant Colonel T. G. Baylor, Chief of Ordnance with Sherman, wrote an extremely detailed report on the ordnance stores captured and destroyed at Columbia.²¹ In meticulous regular army fashion, they were careful to list where each classification was found and how many of each item there were. Their main place headings were: *Citadel*, *Magazine*, *Arsenal*. A subheading under Arsenal appears as *Armory*, still another is *Depot and Armory*.

We may assume that the Federal ordnance people who viewed the captured stores and who gave local place names to captured installations would have used the abbreviated colloquialism "Armory" for Palmetto Armory, which is what most people in Columbia still call it. Remember, too, that the Palmetto Iron Works was only a few hundred yards from the State Arsenal on Arsenal Hill and that the same report refers specifically and quite properly to 500 Palmetto rifles found at the Citadel. On the other hand, the report locates the Citadel and Magazine of Charleston in Columbia, and there was a Confederate Armory in Columbia. It would be interesting to know if the Armory entry applies to the Palmetto Iron Works or to the Confederate Armory, because at the "Armory" were found 6,000 unfinished musket barrels and stocks!

Under Depot and Armory are listed a 1½ inch breech-loading cannon (George's perhaps?)—gun carriages, caissons and a large number of sponges and rammers. It is unfortunate that such large gaps exist in Confederate and South

Carolina Ordnance Records. Documentary proof may not exist in as detailed form as we might wish, but there can be no doubt that the Palmetto Armory played an important part in the

South's war effort. The life of the Palmetto Armory was of short span, but its products endure to its memory. If ever a state got its money's worth, South Carolina did.

FOOTNOTE REFERENCES

1. David Duncan Wallace, *History of South Carolina* (New York, 1934), Vol. III, p. 120.
2. E. Milby Burton, *South Carolina Silversmiths 1690-1860* (Charleston, S. C., 1942), pp. 229-231. Hereafter, Burton.
3. Samuel E. Smith, "South Carolina Ante-Bellum Pistols," *American Rifleman*, Vol. 103 (November, 1955), No. 11, pp. 36-37.
4. Burton, pp. 218-220.
5. E. M. Lander, Jr., "Columbia's Confederate Arsenal," *State Magazine*, Sunday supplement to the *Columbia State*, August 13, 1950. Hereafter, Lander.
6. MS. Collection, South Carolina Archives Department.
7. *Ibid.*
8. Lander.
9. *Southern Agriculturist* (Laurensville, South Carolina, 1853), Vol. I, p. 50.
10. MS. collection, South Carolina Archives Department.
11. *Ibid.*
12. *Ibid.*
13. *Ibid.*
14. Lander.
15. O.R., Series 4, Vol. XLII, p. 181.
16. A. S. Salley, *The State Houses of South Carolina, 1751-1936* (Columbia, South Carolina, 1936), p. 18.
17. Lander.
18. In Richard D. Steuart's voluminous notes, a number of newspaper clippings are found from which the names of the papers or dates of publication were trimmed when they were glued in scrapbooks according to subject matter. This is used only because it has been qualified in the text as doubtful, but is still an interesting comment.
19. J. P. Williams, *Old and New Columbia* (Columbia, South Carolina, 1929), p. 110.
20. W. G. Simms, *The Sack and Destruction of the City of Columbia, South Carolina* (Columbia, South Carolina, 1865). A second edition (with notes by A. S. Salley) (Atlanta, Georgia, 1937), pp. 90-91.
21. O.R., Series IV, Vol. XLVII, p. 181.

fountain, spouting merrily the twelve months round, fed from inexhaustible sources at the far northerly limits of the city; the fascinating circular pool in the immediate foreground looking from Main St., stocked always with brilliant, iridescent gold and silver fish; the well groomed greensward, sloping in graceful lines from the enfolding elevations; the abundant, colorful flower-beds, artistically and conveniently placed immediately in front of the mansion, have not even yet lost their aesthetic appeal.

Those among you having had the privilege of looking upon this panorama of beauty, and who are now bold enough to acknowledge memories covering the intervening years, will agree, I feel assured, that few estates of Worcester's honored citizens and benefactors of those days, were calculated to make more enduring appeal to the aesthetic senses, than the finely appointed acres comprising the homestead of our esteemed citizen Ethan Allen.

An early invasion of the original bounds of this extensive estate was the gift of two house lots, with the houses later erected thereupon, to his daughters when they became the wives respectively of Sullivan Foreland and Henry C. Wadsworth. These houses are still standing at the original locations at Piedmont and Main Streets. The brick house on the corner was owned and occupied at a later date by Hon. Charles B. Pratt, one-time mayor of the city. The adjoining frame house was the home for many years of Eli J. Whittemore, a wealthy manufacturer and financier. But, alas, the on-rushing tide of human enterprise and hectic expansion has obliterated the last vestige of the sumptuous home-aces and mansion of which Worcester's citizens were so justly proud.

But, again to the theme of the evening.

In 1856, Eli Thayer, the noted anti-slavery advocate and member of Congress from this district (also, founder and builder of the great hotel, of Main St. South), controlled the rights to manufacture the B. F. Joslyn newly invented rifle. This was regarded as superior to the noted "Sharpe rifle," which was much in vogue, on account of its readiness of loading and the simplicity of construction. In 1859 the stone shop at South Worcester, just north of Cambridge St., was purchased and the Joslyn breech-loading gun was turned out in quantities. In 1860 the War Department ordered one thousand of these rifles, said to have been the largest order for firearms ever given to one firm in the country. For some reason the

enterprise was abandoned at a later date, and the building was used as a soldiers' barracks. After the war it was known as "Adriatic Mills" where fabrics of some kind were made.

About this time, the records reveal, Nathan Washburn of Worcester (not one of the Ichabod Washburn family) was making five tons of rifle-barrel iron per day for the United States armory at Springfield, Mass., and was under contract to furnish 100,000 musket barrels.

Obviously, these specialized activities were inspired by necessities of the Civil War, giving definite direction to industry in general. And so we find Osgood Bradley, probably the outstanding railway car manufacturer of his day, whose name is still with us, in this connection, turning out gun-carriages at his shop near Washington Square on Grafton St.

Also, Wood & Light, machine-tool workers at the "Junction," were supplying Springfield armory with needed equipment.

Lucius W. Pond, a prominent machine-tool maker and inventor, was building light rifle cannon of which he was inventor, known as the "Ellsworth gun." This was a four-foot breech-loading rifle-gun, carrying a chilled conical ball weighing 18 ounces, which was projected a distance of three miles. The gross weight of gun was 450 pounds, the cost \$350.

About 1861, George Crompton, well-known founder of the locomotive industry here, added to his developing business the manufacture of gun-stocks, which were sold to gunmakers of the period. At the close of the Civil War this branch of the business was given up.

An employee of Allen & Wheeler, Frank Copeland, set up on his own account in 1863, at No. 17, Hermon St., a business destined to leave its impress upon the industry for many years. At first he manufactured revolvers. In 1876 he invented a single shot, breech-loading sporting gun known as "The Champion." He produced later a single-barrel sporting gun called the "F. Copeland gun," which proved to be superior to other guns in general service quality and of greater penetrating power. Later still, at same location, the gun business was succeeded, (1889), under management of J. M. Copeland, by the manufacture of a small vertical steam engine from one to twenty horse power.

Johnson & Bye were engaged in the firearms business here also in 1871. Martin Bye was regarded as the mechanical genius of the

To Oliver P. Morton¹

To Gov O P Morton

Sept 22d 1861.

By Telegraph from Washington 1861

Have just ordered Gen Fremont to send up gun Boat if he can spare it

A. LINCOLN

¹ Copy, In. The copy received by Morton is written on a Western Union Telegraph Company blank.

To Montgomery C. Meigs¹

September 23, 1861

The within recommendations of James H. McKay are excellent and most ample and proper and he should be appointed if there be any vacancy

A. LINCOLN

Sept 23. 1861

¹ AES, owned by Mary I. Callwell, San Francisco, California. Lincoln's endorsement is written on an envelope. The papers referred to are no longer with the endorsement. James H. McKay of Illinois was nominated to the Senate as captain and assistant quartermaster of Volunteers, April 7, and confirmed April 14, 1861.

Endorsement:

Release of Imprisoned Secessionists¹

[c. September 24, 1861]

Were sent to Fort Lafayette by the military authorities of Kentucky and it would be improper for me to intervene without further knowledge of the facts than I now possess.

A. LINCOLN.

¹ OR, II, II, 808. Lincoln's endorsement is on a communication from George D. Prentice, September 24, 1861, asking release of ex-Governor Charles S. Morehead, Reuben T. Durrett, and M. W. Barr, arrested in Louisville, Kentucky. See also Lincoln to Seward, October 4, *infra*.

Memorandum About Guns¹

Executive Mansion, Washington, Sep. 24. 1861.

If twenty guns, and a carriage and appointments to each, shall be made equal, or superior to the Ellsworth gun & carriage, exhibited some time since to Capt. Kingsbury,² and more recently to me, the quality to be judged of by Capt. Kingsbury; and shall be delivered to the Government of the U.S. at this city, within sixty days from this date, I will advise that they be paid for at the price of three hundred and fifty dollars for each gun, with its' carriage

SEPTEMBER 25, 1861

and appointments--and in addition will advise that reasonable charges for transportation from Worcester, in Massachusetts to this city, be paid. Will also advise that forty cents per pound be paid for all good ammunition, suitable for said guns which shall be furnished with said guns, provided the amount does not exceed two hundred rounds to each gun.

A. LINCOLN

¹ ADS, DLC-RTL. Eli Thayer, ex-representative from Massachusetts (1857-1861), wrote Lincoln on September 21, 1861, suggesting in the interest of increased efficiency of Union troops, "The formation of Light Artillery Brigades. . . . The cannon to be drawn by the soldiers. . . . The cannon best adapted to this service is the one called the 'Ellsworth Gun,' from his [Elmer E. Ellsworth] having first ordered such for the use of his Zouave regiment." (DLC-RTL).

² On November 30, 1861, Captain Charles P. Kingsbury of the Ordnance Department certified the receipt and performance of the cannon presented by Thayer (DLC-RTL).

To Lorenzo Thomas¹

Adj't. General, please answer this, or have it answered.

Sept. 24, 1861

A. LINCOLN

¹ AES, DLC-RTL. Lincoln's endorsement is written on a telegram from Colonel John B. Turchin, Camp Dennison, Ohio, September 23, explaining that his regiment, the Nineteenth Illinois, had ". . . one hundred & fifty (150) men disabled by rail road accident about one hundred (100) men sick. . . . Our uniforms shirts & shoes worn out. The men not paid for two (2) months. Our equipments are sent . . . to Washington. The Regt is ordered to Louisville. . . . which way shall we go. . . ." Below Lincoln's endorsement is an endorsement by Absalom Baird, A.G.O., that a telegram had been sent to Turchin "to obey the orders of his General."

To Simon Cameron¹

The within recommendations of Mr. Millard are ample; and I shall be gratified if a place can be found for him.

Sept. 25. 1861

A. LINCOLN

Please see Mr. Millard

A.L.

¹ AES, III. Lincoln's endorsements are written on an envelope which Lincoln addressed "Hon. Sec. of War." The papers referred to are no longer with the envelope, and "Mr. Millard" has not been identified.

To Simon Cameron¹

Sec. of War, please see Mr. Denny, of Mass.

Sept. 25. 1861.

A. LINCOLN

¹ ALS-P, ISLA. Lincoln's note is written on a small card. Denny may have been Christopher C. Denny, clothing manufacturer of Leicester, Massachusetts.

DECEMBER 3, 1861

Rev. Henry Hopkins September 25, 1861.
Rev. F. M. Magrath October 30, 1861.
Rev. F. E. Boyle October 30, 1861.
Rev. John C. Smith November 7, 1861.
Rev. Wm. Y. Brown November 7, 1861.

¹ Thirty-seventh Congress, Second Session, *Senate Executive Document No. 1*, p. 20. This form letter is printed as "Schedule A," immediately following the Annual Message. See also Lincoln to Magrath, October 30, 1861, *supra*.

Endorsement on Bill Rendered by Daniel B. Pond¹

I advise that the above account be paid. A. LINCOLN
Dec. 3. 1861

¹ Copy, DLC-RTL. Lincoln's endorsement is on a copy of the following bill, certified by Lincoln's secretary William O. Stoddard:

Washington, Nov. 29th 1861	
The United States Government	Dr.
To Daniel B. Pond	
To Twenty Ellsworth Guns	
Carriages and appointments	
at \$350.-	\$7000.00
" Four thousand rounds of am-	
munition at 40 c	1600.00
" Transportation from Worcester	
to New York	78.87
" Transhipment	13.00
" Transportation from New	
York to Washington	120.00
	<hr/>
	\$8811.87

To George B. McClellan¹

Please read and consider this letter. A.L.
December 3. 1861

¹ OR, I, VII, 469, 470. There are two identical endorsements of this date on two letters from Samuel P. Carter to Horace Maynard, November 21, and 25, 1861. Carter, as acting brigadier general of the East Tennessee Brigade at Camp Calvert near London, Kentucky, requested Representative Maynard of East Tennessee to get action in moving troops (his brigade in particular) to the defense of East Tennessee and Kentucky. McClellan forwarded the letters to General Buell, December 3, 1861, ordering him to "send . . . with the least possible delay, troops enough to protect these men. . . . You may fully rely on my full support in . . . the liberation of Eastern Tennessee. . . ." (*Ibid.*, p. 468.)

Buell¹

ington, D.C.,
 r 31, 1861.
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 movement by
 A. LINCOLN.

never received a
 m. Hope to do so
 d., p. 526). Buell
 eral Halleck and
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 Halleck and Buell,

Washington,
 ec. 31, 1861.
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 in Kentucky;
 a command in
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undesireable, had never occurred to me. You constantly speak of being placed in command of only 3000. Now tell me, is not this mere impatience? Have you not known all the while that you are to command four or five times that many?

I have been, and am sincerely your friend; and if, as such, I dare to make a suggestion, I would say you are adopting the best possible way to ruin yourself. "Act well your part, there all the honor lies." He who does *something* at the head of one Regiment, will eclipse him who does *nothing* at the head of a hundred. Your friend as ever,

A. LINCOLN

¹ ALS, CSMH. Major General Hunter's endorsement on the envelope containing Lincoln's letter is as follows: "The President in reply to my 'ugly letter.'—This letter was kept on his table for more than a month, and then sent by a private conveyance, with directions to hand it to me only when I was in a good humor!!!!—" Hunter's letter of December 23, 1861, is in part as follows: "I am very deeply mortified, humiliated, insulted and disgraced. . . . I am sent here [Fort Leavenworth] into banishment, with not three thousand effective men under my command, while one of the Brigadiers, General Buell, is in command of near one hundred thousand men in Kentucky. The only sin I have committed is my carrying out your views in relation to the retrograde movement from Springfield. . . . So it appears that I have been deprived of a command, suitable to my rank, for presuming to answer . . . official questions put to me by the Secretary of War . . . for in no other way was I connected with the Fremont troubles. . . ." (DLC-RTL).

To William H. Seward¹

Sec. of State, please see, Mr. Gerard. A. LINCOLN
 Dec. 31, 1861

¹ ALS, IHI. George Gerard of Pennsylvania was nominated consul to Brunswick, but on February 20, 1862, Lincoln withdrew the previous nomination and nominated him for the consulate at St. Helena, which appointment the Senate confirmed on March 19, 1862.

To Joseph G. Totten¹

Will Gen Totten, please see Mr Hitchcock A. LINCOLN
 Dec. 31, 1861.

¹ Stan. V. Henkels Catalog 1372, March 19, 1925, No. 87. The bearer of Lincoln's note has not been identified.

To George D. Ramsay¹

[1862?]

Col. Ramsey [*sic*], please see Mr. Hegon [Hecon?],² and show him one of the little breech-loading cannons I got of Hon. Eli Thayer.³

A LINCOLN

¹ ALS, CSMH-Eldridge Collection.

² Unidentified.

³ See Lincoln's memorandum about guns, September 24, 1861, *supra*.

Reports of Col. S. Crutchfield, U. S. Army, Chief of Artillery, of operations September 13-19.

HEADQUARTERS ARTILLERY, SECOND CORPS,
April 16, 1863.

COLONEL: I have the honor to submit the following report of the operations of the artillery of this army corps in the capture of Harper's Ferry and battle of Sharpsburg, in September, 1862:

On Saturday, September 13, the command of Lieutenant-General Jackson appeared before Harper's Ferry on the southern side, having approached it from Martinsburg. That day was spent in reconnaissances.

On Sunday a cannonade was opened on the enemy from the batteries of Brig. Gen. John G. Walker, from the Loudoun Heights, and from those of Major-General McLaws, from Maryland Heights. The enemy were strongly intrenched on Bolivar Heights and just around the former house of the superintendent of the armory. At the latter place his fire was pretty well silenced late in the day. Toward the close of the afternoon a general advance was made on the place. Maj. Gen. A. P. Hill's division moved along the west bank of the Shenandoah; that of Major-General Ewell, commanded by Brigadier-General Lawton, was on the left of General Hill's, while Jackson's division, commanded by Colonel Grigsby, approached on the road from Harper's Ferry to Shepherdstown. The early approach of night prevented any serious engagement.

During the night, ten guns from the batteries of Captains Dement, Brown, [Lieutenant] Garber, and Latimer were moved up the Shenandoah, and, crossing at Kelly's Ford, moved down on the other side until opposite the left of the enemy's line of intrenchments. This position, although commanded perfectly by Bolivar Heights, yet secured a fire into the rear of the enemy's works on his left, where he had a work with an embrasure battery of four guns, but open in the rear, and the first point of his works to be encountered by Maj. Gen. A. P. Hill. This work gained, his other works were untenable. A road having to be cut for these ten guns prevented their opening at daybreak, as General Jackson had ordered. The attack was begun by a battery of eight guns in front and rather to the right of this work, from the batteries of Captains Pegram, McIntosh, Davidson, and Braxton, of Maj. Gen. A. P. Hill's division. In a short time the guns of Captains Brown, [Lieutenant] Garber, Latimer, and Dement, being in position, their fire was directed against this work from the rear. Its battery was quickly silenced, the men running from their guns, but returning to them in a short time after the guns directed on the work were brought to bear on the enemy's infantry in his intrenchments. These pieces were, therefore, again directed on the work, and in something less than an hour its fire was completely silenced, and our guns being again turned on the enemy's infantry, they soon began to fall back from their intrenchments in great confusion, and the white flag was raised over their works.

The captured guns being turned over to the quartermaster for removal. I can make no exact return of the number. We had none disabled, and, of course, lost none.

On reaching Shepherdstown late next evening, I met Brig. Gen. W. N. Pendleton, who desired me to return to Harper's Ferry and endeavor to get together batteries of the captured guns and such ammunition as I could and send it to Shepherdstown or the battle-field of Sharpsburg, as our ordnance supplies were getting short and our batteries in an inefficient condition from hard marching and previous fighting. I

therefore returned to Harper's Ferry. After much difficulty I found the quartermaster in charge of the captured guns, and found he had been busy removing them, and in so doing had mismatched the caissons, limbers, and guns to such an extent that after vainly spending half the day at it, I gave up the task of getting together any batteries from among them. The batteries of Captains Brown, Dement, and Latimer had been left at Harper's Ferry, as disabled, on account of the condition of their horses. I therefore had horses turned over to them, filled them up with ammunition, exchanged two of Captain Latimer's 10-pounder Parrotts, whose vent-pieces had burned out in the action of the day before, for two 3-inch rifles of the captured guns, and started them for the battle-field, going on ahead myself. I got there too late in the evening to be able to give any report of the battle. In it, however, we lost no guns. Captain [Charles] Thompson's (then Captain D'Aquin's) battery [Louisiana Guard Artillery] captured one 10-pounder Parrott, which they brought off. In recrossing the Potomac a forge belonging to Captain Crenshaw's battery and a caisson belonging to Captain Brockenbrough's were lost on this side of the river from the sheer exhaustion of the horses, both rolling down a cliff on the side of the road.

I have the honor to remain, very respectfully, your obedient servant,
S. CRUTCHFIELD.

Colonel and Chief of Artillery Second Corps.

Lieut. Col. C. J. FAULKNER,
Assistant Adjutant-General.

HEADQUARTERS VALLEY DISTRICT,

September 22, 1862.

GENERAL: I received your order for a report of the batteries of this army corps this morning, and have the honor to submit the following statement of their condition:

1st. In Maj. Gen. A. P. Hill's division the condition of the artillery is so satisfactorily set forth in Lieutenant Chamberlayne's report that I submit it as it is.*

2d. In the division commanded by Brig. Gen. J. A. Early, three of his batteries are in excellent order, having been refitted by myself at Harper's Ferry, according to your order to me in Shepherdstown. Another, that of Captain Balch's, will be put in first-rate condition by the securing of the two Napoleon guns I sent them to you for. Two others, those of Captains D'Aquin and Johnson, are disabled from hard service. I have sent them to Martinsburg to recruit their horses and men, by rest, to have their horses shod, &c. If they can get a week or ten days' rest then 30 horses will put them in good order.

3d. In Maj. Gen. D. H. Hill's division all the artillery is reported unfit for duty. This division has not been associated with us long enough for me to form such an acquaintance with his officers as to enable me to put an entirely reliable estimate upon the judgment of said officers. From the examination I gave to these batteries, I deemed it best to send them back to Martinsburg to refresh men and horses and to shoe the latter. A particular report I sent you by Major Pierson, his chief of artillery.

4th. In Major-General Jackson's own division I submit the report of Major Shumaker, chief of artillery. I have reduced his call for horses to 123 from 204, as I know how scarce they are, and you will find it impossible to supply fully all the demands made on you for them.

* Not found.

I do not consider a forge necessary now for Captain Carpenter, as he can use Captain Poague's. One is needed, however, by Captain Raine and one by Captain Cutshaw. I do not consider that Captain Caskie needs a forge, as he and Captain Cutshaw are attached to the same brigade. Captain Brockenbrough can work the three guns he asks for by turning in his howitzer, and I would be glad to see him get Napoleons. I do not request it, though, if you need them more elsewhere, especially if other batteries can furnish the teams. One of his guns, a 12-pounder Blakely, he reports disabled. The stock was broken in the battle of Sharpsburg, and it was sent to Winchester. If it can be repaired there, or the gun put on another carriage, I would be glad to get it back, and then, by giving Captain B[rockenbrough] two Napoleons and allowing him to turn in his howitzer, he would have a capital battery of four guns, two of them rifled. This is one of our best companies.

Captain Cutshaw has two 12-pounder howitzers, while his caissons are those of 6-pounder guns, and need alteration.

As to the reserve needed by this army corps, I would wish to consult General Jackson before reporting specifically, and as he is now at General Lee's headquarters and may be engaged there some time, I must beg your indulgence for a short time before reporting, which I will do so soon as I see him.

Very respectfully, your obedient servant,
S. CRUTCHFIELD,
Colonel and Chief of Artillery, Valley District.

Brig. Gen. WILLIAM N. PENDLETON,
Commanding Artillery.

[Inclosure.1

HQRS. OF ARTILLERY, JACKSON'S DIV., VALLEY DIST.,
September 22, 1862.

Col. S. CRUTCHFIELD,
Chief of Artillery, Valley District:

SIR: In obedience to your order of yesterday, I have the honor to report the condition of the batteries of this division, their wants, &c., as follows:

Batteries.	Present for duty.				Absent.				Wanted.			
	10-pounder Parrotts.	3-inch rifles.	12-pounder Napoleons.*	12-pounder howitzers.	10-pounder Parrotts.	3-inch rifles.	Blakely rifles.	12-pounder Napoleons.*	6-pounder guns.	Horses.	Forges, harness, and harness.	Forge wagons.
Poague's.	1							1	1	25		
Carpenter's.	1	1	1					1	1	29	1	1
Cutshaw's.	1	1		2		1						
Caskie's.	1	1	1					1	1	16	1	
Rice's.	1	1						1	1	8		
Woodling's.	1	1						1	1	14		3
Brockenbrough's.	1	1		1	1	1				30	1	
Raine's.		2		2								
Total.	4	7	2	5	2	1	1	1	5	128	4	1

* Federal.

† No report.

‡ Iron.

I inclose the reports of the commanding officers of the batteries,* from which this is condensed, from which you will be able to learn the reasons for the separate reports, losses, absence, &c.

Very respectfully,

L. M. SHUMAKER,
Major and Chief of Artillery, Jackson's Division.

No. 269.

Report of Brig. Gen. Jubal A. Early, C. S. Army, commanding Ewell's division, of operations September 3-27.

HEADQUARTERS EWELL'S DIVISION,
January 12, 1863.

CAPTAIN: In accordance with instructions from the headquarters of the corps, I submit the following report of the operations of this division since the movement from the neighborhood of Gordonsville, northward, in the month of August last, until it reached Bunker Hill, in September:

This report, however, is necessarily defective in regard to all the other brigades of the division except my own, as there were other division commanders until after the commencement of the Battle of Sharpsburg, on September 17—Major-General Ewell having commanded until the night of August 28, when he was wounded in the action near Groveton, and Brigadier-General Lawton having command from that time until he was wounded at the battle of Sharpsburg. It is impossible to supply the necessary information in regard to the particular parts taken by Lawton's and Trimble's brigades in the several actions commencing with the affairs of Hazel River, on the 22d, and Bristoe and Manassas Junction, on August 27, and ending with the battle of Sharpsburg, except as to the part taken by Trimble's brigade at Sharpsburg, as General Lawton, who commanded his brigade until August 29, is absent in Georgia, wounded, and Colonel [M.] Douglass, who commanded the brigade from August 29 to September 17, was killed at Sharpsburg on that day, and General Trimble, who commanded his brigade until August 29, is absent, wounded, and Captain [W. F.] Brown, of the Twelfth Georgia Regiment, who succeeded him in the command, was killed at Ox Hill near Chantilly, on September 1. There is the same difficulty in regard to Hays' brigade as to the part taken by it on August 30, at Manassas, and at Ox Hill on September 1, as Colonel Strong, who commanded on these occasions, was killed at Sharpsburg. This report, therefore, will not contain particular details of the operations of any brigade but my own in most of the actions in which the division was engaged during the time covered by it.†

On the morning of the 3d [of September] the division, with the rest of the troops, was moved to the left, crossing the Loudoun and Hampshire Railroad at a station above Vienna, and then passing through Dranesville in the direction of Leesburg, and encamped on a creek not far from Dranesville.

* Not found.

† Portion of report here omitted is printed in Series I, Vol. XII, Part II, pp. 704-716.

Ripley's nephew, Roswell Ripley, was in fact a Confederate general and was said to be "a red-hot and indefatigable Rebel." But so was Lincoln's brother-in-law. Cameron's opinion of the charge may be guessed from the fact that he sent the letter to Ripley himself for disposal.

Finally Sherwin tried to raise and command an artillery regiment—to be equipped, of course, with the Cincinnati Breech-loading Cannon. Unfortunately, Governor William Dennison of Ohio did not admire the voluble lawyer. "Is it possible," he asked Cameron, "that you have authorized W. G. Sherwin to organize a regiment of artillery? If so, for God's sake withdraw the authority. Such commission will make a farce of the public service." Dennison prevailed. The career of the Cincinnati Breech-loading Cannon was not yet over, nor was Lincoln's interest in it; but W. G. Sherwin's name appears no more in its history.

* "A living steam engine," one of his fellow Congressmen once called Eli Thayer of Worcester, Massachusetts, "a man of eccentric humor and of wonderful and advanced thought, mixed with practical sense." At various times Thayer was an inventor, an educator and a politician; in the character of abolitionist he founded the New England Emigrant Aid Society, which sent free-soilers and Sharps rifles into Kansas during the middle fifties.

Having bought manufacturing rights to B. F. Joslyn's new breech-loading rifle, the imaginative Yankee applied the same design to a little breech-loading fieldpiece and sent a dozen specimens out to chastise the Kansas "border ruffians." In April 1861, when the conflict flared up again on a continental scale, Thayer sold two of his little cannon to the Union Defense Committee of New York, for the use of Elmer Ellsworth's Zouave regiment. Thereafter he called his cannon the "Ellsworth Gun."

This curious hybrid, somewhere between a Brobdingnagian rifle and a Lilliputian cannon, fell under Lincoln's interested scrutiny in September 1861. The gun Lincoln saw was four feet long, had a 1½-inch bore and weighed about three hundred pounds without its carriage. Like the Joslyn rifle, its breech mechanism consisted of a

cone and expanding rings, held in place by a tapered steel key which passed through the shank of the breech and was operated by a compound lever. A handle opened the breech piece. The conical chilled-iron ball, wound with tallow-soaked cord, fitted into a cup at the end of a brass cartridge; and the 3-ounce charge was ignited through perforations near the other end. Instead of a limber, the carriage had a drag rope attached for hauling by manpower.

Thayer made much of the gun's maneuverability, cheapness and rapidity of fire; and Lincoln at last consented to order twenty guns at \$350 each, subject to the inspection of McClellan's chief ordnance officer (who had now become *Colonel* Kingsbury). When the guns arrived late in November, Kingsbury pronounced them "in many respects superior" to the original model, and they were duly paid for.

Lincoln took pride in his purchase. "Col. Ramsey," he wrote on one occasion, "please see Mr. Hegan, and show him one of the little breech-loading cannons I got of Hon. Eli Thayer." At the arsenal where they were stored, however, the guns were regarded with tolerant skepticism. "I never supposed the gun would be introduced into the service," Ramsay confessed later, "and I gave little or no attention to it." As we shall see, Ramsay was mistaken.

Before the year was out, one other small breech-loading fieldpiece captured Lincoln's interest.

One day in November 1861 John H. Gage of Nashua, New Hampshire, came into Lincoln's office and spread out the plans of a gun invented by George A. Rollins, the young proprietor of a Nashua machine-tool factory. The gun was a breech-loading iron fieldpiece, about four and a half feet long, and having a 2-inch bore. Five ounces of powder, Gage told Lincoln, could send the gun's 4-pounder ball as far as two and a half miles. Moreover, the Rollins gun was phenomenally rapid in operation. One had been fired a hundred times in six minutes without overheating. Lincoln was a busy man. But by now, after his examination of the Cincinnati Cannon and the Ellsworth gun, he was decidedly interested in breech-loading cannon; and so he spent three quarters of an hour

to ask for more particulars, not being the man to look a gift horse in the mouth.

Ripley presently found a use for Colonel Geary's report.

Abolitionist pressure had forced Lincoln to give General Frémont a new command: the Mountain Department, embracing western Virginia. Three days after Geary's report, an exchange of telegrams occurred between Frémont and Ripley that must have unsettled Ripley's disposition for the rest of the day.

Frémont to Ripley:

Our experiments here with the Union repeating gun are satisfactory. Can you spare and will you send immediately sixteen (16) with equipments & full supply of ammunition for this Dep't by way of Pittsburg . . . Will send copy of report.

Ripley to Frémont:

Telegram received—Have no Union repeating guns on hand, and am not aware that any have been ordered.

Frémont to Ripley:

Upon the nineteenth of December on recommendation of Genl McClellan the President ordered fifty of the Coffee Mill or Union guns. Was there not some error of name in my dispatch.

There was, of course, no error in the dispatch received at the Ordnance Office; Ripley had simply lied and been caught at it. Neither was an answer possible to Frémont's second wire; and Ripley made none. After a few days, realizing that he would get nowhere with the Chief of Ordnance, Frémont took the matter up with Lincoln himself. On May 15 Lincoln sent to Ripley for "Gen. Frémont's original requisition for 'Coffee Mill Guns.'"

This put Ripley in a corner, but the old man worked out of it ably if not altogether honorably. At the moment Stonewall Jackson was giving Frémont all the

trouble he could handle and a good deal more besides. This gave Ripley a free hand. Apparently he took his cue from Lincoln's failure to ask for Frémont's report along with Frémont's requisition. Ripley therefore withheld Frémont's report and substituted Geary's. More than that, the fact that an unrelated document of that period was given the file number originally assigned to Frémont's report, and the fact that the latter is no longer to be found in Ordnance Office files, inspire the ugly suspicion that Ripley removed the Frémont report permanently from the files.

After Jackson finished with Frémont in June, the beaten Pathfinder on his own responsibility ordered two coffee-mill guns from Woodward and Cox at the steep price of \$1500 each. He never had a chance to use them; for a few days later, he was placed under the upstart John Pope, and, piqued by the slight, he quit the Army.

So far as the records show, Frémont never got the sixteen machine guns he had requisitioned in April. Yet, we may wonder. For at Harper's Ferry in September, from troops which had been part of Frémont's command, Stonewall Jackson captured what the *Richmond Enquirer* described as "17 revolving guns."

The same Harper's Ferry surrender that gave Stonewall Jackson his "17 revolving guns" gives us a clue to the fate of the Ellsworth guns, those "little breech-loading cannons" Lincoln had "got of Hon. Eli Thayer."

To the surprise of Colonel Ramsay, General Frémont asked for the Ellsworth guns in the spring of 1862; and all twenty of them, gleaming with oil and varnish, were accordingly sent off to the Shenandoah Valley. As already noted, they failed to stop Stonewall Jackson. During Jackson's siege of the Harper's Ferry garrison, Captain Acorn of the 12th New York militia took "a detachment of Frémont's, more familiarly known as 'jackass' guns," to Maryland Heights, where they rendered "valuable assistance." From "Ellsworth" to "jackass" is quite a comedown; but the *New York Times* listed the guns as twelve two-inch rifles, close enough to suggest their identity. Whatever they were, the rebels had them now.

Somewhere in the service were two other Ellsworth guns, bought by General Butler in January. But they made no name for themselves. By 1863 all the Ellsworth guns had vanished into limbo or Dixie.

Frémont must have got his first lone coffee-mill gun from J. D. Mills, that merchant of death with the impenetrable initials—else how could the general have known so much about Lincoln's ordnance transactions? At any rate, Mills remained active in promoting the coffee-mill guns.

After the mainspring broke in General Butler's coffee-mill gun, Mills dropped Woodward and Cox as manufacturers. Instead, he and his associates organized the American Arms Company of New York City, a joint-stock association of which Lewis Carr was president, Mills secretary and Frederick Avery treasurer. By April 1862 the company was well along on Lincoln's second order, the one for fifty guns.

McClellan had at last transferred the Army of the Potomac by water to Fortress Monroe, whence he was to make a lumbering drive up the Peninsula toward Richmond. Colonel Charles H. Van Wyck's 56th New York Volunteers were on the point of sailing for the Peninsula; and when Van Wyck heard about the marvelous new weapons being turned out at 498 Broadway, he applied direct to Avery for one. The transaction was an irregular one. If General Ripley should happen to have the final say, the company would be left to whistle for its money. But Van Wyck was a Congressman and a frequent visitor to the White House, and if the gun pleased Van Wyck, the President would very likely hear about it. Avery decided to take the chance and give Van Wyck his gun.

Meanwhile, McClellan had unhappily discovered that the Warwick River ran squarely athwart his line of march, instead of down the Peninsula as shown on the maps. Being McClellan, he halted his splendid army and settled down to a leisurely siege. The theatrics of "Prince John" Magruder and a handful of defenders in Yorktown kept the Army of the Potomac fussily immobile for a

month. Van Wyck's regiment arrived with its coffee-mill gun in plenty of time to take its place on the left flank of the siege line, in the vicinity of Warwick Court House, which consisted of a one-story courthouse, a one-room jail and three houses.

The regiment was still there four days later on April 21, fretting in the marshes, when a correspondent of the *New York Evening Post* toured its lines and came away to write the earliest known eyewitness account of a machine gun in action. "At this time," the *Post* man reported, "a novel kind of weapon was brought into service. It consists of a large-sized rifle with a hopper and machinery at the breach, which loads and fires by turning a crank one hundred and seventy times in a few seconds. In fact, it is one continuous discharge. The balls flew thick and fast, and the Yankee invention must have astonished the other side. There are some half-dozen of these guns in the division on trial, and if we may believe our eyes while watching the effect, they are entitled to consideration."

The air grew heavy with the smell of spring in a wet country, and one day early in May the army realized that the rebels had abandoned Yorktown. Up and after them it rumbled, and Van Wyck's regiment with it. But not the coffee-mill gun. For some unknown reason, that stayed behind, to be incorporated into the Federal defenses of Yorktown.

Others came to take its place in the field, twenty of them altogether by late May. Not all were from Lincoln's two orders. Governor Andrew Curtin of Pennsylvania, whose zeal for new weapons approached Lincoln's, had already begun to supply the guns to the troops from his state. "I understand that every Pennsylvania regiment in the service is to have them," a private of the 53rd wrote to his sister on June 10. "All the Pennsylvania regiments near here have them." Of all the artillery on either side, he thought his regiment's coffee-mill gun "the greatest one yet. . . . It is a curious Yankee contrivance. It makes a noise like the dogs of war let loose. Don't you think one of those coffee mills would 'weed out' a secesh regiment about as quickly as any tools they have?"

ed them much pleasure, would have been more gratifying had they not been roasted for three hours by the hot sun."

Not long after, Colonel Berdan returned the call at the White House: he wanted his Sharpshooters to be made a separate corps, not a pool of skirmishers to be dribbled here and there throughout the Army, and he wanted them armed with Spencer rifles. "I will send for the Secretary and have the matter settled today, that you may get off at once," Lincoln said. "You don't look well."

Stanton came bristling in under the impression that Berdan wanted to make trouble, and a stormy scene ensued. While Lincoln listened uneasily, Stanton berated the colonel about the near mutiny of January, insinuating that Berdan was cooking up another serving of the same. Berdan left with nothing accomplished. He wrote Lincoln in November, again pleading for Spencers and again without avail.

* There were mysteries in the battle record of Lincoln's new weapons during 1862. Why were Short's incendiary shells not used? Why did Van Wyck's regiment leave its coffee-mill gun at Yorktown? Just what was wrong with Colonel Pratt's coffee-mill gun? Were the Ellsworth guns captured at Harper's Ferry, and if not, what became of them?

But there was no longer any mystery about the value of breechloaders. Even old Army officers who remembered the breechloader mishaps of twenty years before were wavering in their allegiance to General Ripley's views. "The opinion is becoming very general among army officers," a speaker at Cooper Institute that December said, "that the power to load very quickly is of the very highest value." History is often made when "the world accepts the obvious."

CHAPTER 16

Admiral Dahlgren

BY THE SUMMER OF 1862 WASHINGTON had ceased to be "the center of great operations," and Captain Dahlgren knew it. Baffled ambition fixed his thin mouth in grimmer lines. Only in Lincoln's feeling toward him did the captain see a straw of hope. Early in June the President had written Stanton: "I need not tell you how much I would like to oblige Capt. Dahlgren"; and through Lincoln's intercession, Dahlgren's brilliant young son Ulric had been made a captain of volunteers. Now, in July, Dahlgren wrote Lincoln recalling his own past services and pressing for the tour of sea duty in which he saw his only chance at glory and promotion to admiral.

Secretary Gideon Welles had other plans. For Dahlgren to forsake ordnance work, Welles thought, would be "wrong to the service, and a great wrong to the country. . . . He is not conscious of it, but he has Dahlgren more than the service in view."

Back in January, when Lincoln was stirring up the Army Ordnance Department, Lincoln had asked Dahlgren's views on the organization of the Navy Bureau of Ordnance. Dahlgren had told Lincoln that instead of being a "purely administrative" officer, the chief "should himself participate in the various operations," and should have an assistant to handle office affairs. These were tacitly understood as Dahlgren's conditions for accepting the post of chief, with Harry Wise as his assistant. And now the President had just signed into law a bill embodying them. Dahlgren's reluctance

Ben Butler asked Lincoln for one or two of the guns to use immediately against an enemy ironclad on the James River. Lincoln replied firmly: "The Ames guns I am under promise to pay, or rather to advise paying, a very high price for, provided they bear the test, and they are not yet tested, though I believe in process of being tested. I could not be justified to pay the extraordinary price without the testing. I shall be happy to let you have some of them so soon as I can." Butler kept pressing for Ames guns, spurred on by Pet Halsted, but before any were ready he had vanished forever from the military scene.

Late in October Major General Quincy A. Gillmore, president of the board, transmitted the report, a formidable sheaf which included minute data on every one of the seven hundred rounds fired. Glancing at the bulky documents, Lincoln exclaimed, "I should want a new lease of life to read this through!" He threw the report down on the table. "Why can't a committee of this kind occasionally exhibit a grain of common sense? If I send a man to buy a horse for me, I expect him to tell me his '*points*'—not how many *hairs* there are in his tail." And he had Gillmore summoned to Washington "without delay." When Gillmore arrived, he told the President that Ames's cannon were stronger and tougher than any of their size, in or out of the service. They would be exceedingly useful as long range guns; and they would not burst—as some of the heavy Parrotts had started to do, killing some men and demoralizing all their gun crews. After that Lincoln must have felt that he had bought the right horse. So did Assistant Secretary Fox and even Captain Wise, who in the face of the Parrott-gun disasters finally turned to the Ames guns as the Navy's only hope.

Lincoln's conditions had been met, and by the end of May 1865 thirteen Ames guns had been accepted, the other two having burst in proof because of imperfect welds at the breech. Eventually Ames was paid a little more than \$215,000. But the war had already ended before any of the big guns could fire a shot against the Confederates. Late in 1865 the Chief of Ordnance condemned the guns as unreliable. And presently the Bessemer and open

hearth processes outmoded wrought-iron guns by making steel cheap, dependable and easy to handle.

Did Horatio Ames make a good thing out of the money paid him on Lincoln's order? His own testimony is sufficient answer. "If you," he wrote a fellow contractor in 1868, "had worked seven years with these puppies, and had lost \$300,000 and the use of your works that could have made \$300,000 more, you would have felt weak in the knees, too." By the time he died in 1871, Horatio Ames had lost his ironworks and was living on the largess of his nephew Oliver.

Although Lincoln himself turned away from them, certain new weapons for which he stood as godfather went on in their military careers—some obscurely, some bizarrely, some triumphantly.

The war record of the Woodruff guns, bought by Lincoln for the 6th Illinois Cavalry, fell short of the heroic. If any of the little cannon went along with the 6th Illinois on Grierson's famous raid in April 1863, their performance was evidently not worth reporting. The 4th Iowa Cavalry somehow acquired three Woodruff guns, and Private "Cy" Washburn took charge of them with great pride. But Private Washburn's little battery was "never known to hit anything, and never served any useful purpose, except in promoting cheerfulness in the regiment." In Arkansas one day a detachment of the 4th Iowa in search of provisions spied a party of rebels on the other side of an impassable creek and sent over a few shots from a Woodruff gun. The only Iowa casualty was Private Benoni Kellogg, who was killed. His body, lashed to the gun, was brought into camp and buried with honors. Confederate casualties in the encounter were unknown; and when the 4th Iowa moved on shortly afterward, Private Washburn was deprived of his guns. The only word of them thereafter is an ordnance return from the Department of the Missouri, showing two on hand late in 1864.

* } The Ellsworth guns were gone, but not forgotten. Major Kingsbury, exiled to the Great Plains by Ripley, told his commanding general, Alfred Sully, about the little cannon; and General Sully

asked the Ordnance Department for some early in 1864. He wrote:

From their description, I should judge [that] . . . I could make good use of them in arming the block houses erected & about to be erected in the Upper Missouri river, and as an armament to the boats expected to be sent up the Missouri river from St. Louis next spring.

But the Plains Indians were safe from the Honorable Eli Thayer's "little breech-loading cannons," none of which could be found at the Washington Arsenal.

The Ellsworth guns have their place in history, nevertheless. Except for a single 70-pounder Whitworth, bought in England by Minister Adams in May 1862, Lincoln's little cannons were the only breech-loading artillery purchased by the Federal Government during the Civil War.

As for explosive bullets or "musket shells," General Grant denounced their alleged use by the rebels at Vicksburg as "barbarous, because they produce increased suffering without any corresponding advantage to those using them," and the *Scientific American* was of like mind. Both were still unaware, it seems, of Watson's Yuletide order of 1862 for the Gardiner bullets, which were used later both in Sherman's march through Georgia and in Grant's Richmond campaign. Watson's order was the last by Union authorities. After the Civil War, European nations outlawed such bullets; and in 1868 General Dyer, as Chief of Ordnance, condemned them as "inexcusable among any people above the grade of ignorant savages."

The coffee-mill guns died hard. In October 1863 John H. Schenck, an associate of Edward Nugent, announced himself as their new proprietor and complained that those ordered by Rosecrans had not yet reached that officer's successor, General George H. Thomas, "who highly approves of them." Although sixteen of the machine guns remained on hand at the Washington Arsenal, the Ordnance Office ignored Schenck's complaints, as well as his suggestion that the guns be carried on horseback by cavalry and mount-

ed infantry, ready for swift dismounting and use. Ten, however, were sent to General Butler in February 1864 when he requested them for use on boat service up and down the James River.

Lincoln's last recorded comment on the coffee-mill guns had to do with the specimen given Colonel Van Wyck at the start of the Peninsula Campaign. As Frederick Avery had feared, that gun was not paid for while Ripley headed the Ordnance Office. In October 1864 the dispute came before Lincoln who said, according to Avery's representative, "that if it can be shown that the gun has been used in the service, it ought to be paid for; to the end that innocent parties may not suffer for doing what was really for the good of the service." Avery furnished the required proof, and on August 3, 1865, the American Arms Company at last received payment of \$788.58. That, oddly enough, was the very day on which thirteen coffee-mill guns fetched from \$5 to \$8 apiece in a sale of old ordnance at Fortress Monroe.

Despite the Swamp Angel fiasco, incendiary warfare was not quite dead. In January 1864, by way of a last fling, twenty incendiary shells were thrown into Charleston, "causing a considerable conflagration" according to one report. A month or so later, some rebel guerrillas fired incendiary shells into the steamer *Emma*, fifteen miles south of Helena, Arkansas, but the ensuing blaze was doused in good time. And in July Ben Butler, that insatiable patron of military novelties, enlivened the siege of Petersburg by having incendiary mortar shells fired from a railroad flatcar.

It was Butler to whom Pet Halsted turned when Lincoln lost interest in incendiary shells. In October 1864 Halsted introduced Alfred Berney to Butler and suggested that "a small sprinkling of Hell-fire will do the Imps on the other side a power of good just about this time." Butler was receptive; and in November Halsted arranged a formidable concentration of generals—Grant, Meade, Butler, Crawford, and Warren, among others—to see a demonstration of Berney's liquid near Dutch Gap in Butler's command. (Butler invited Admiral Porter also, but Mrs. Porter's burnt child

must not understand I took my course on the proclamation because of Kentucky. I took the same ground in a private letter to General Frémont before I heard from Kentucky.

You think I am inconsistent because I did not also forbid General Frémont to shoot men under the proclamation. I understand that part to be within military law, but I also think, and so privately wrote General Frémont, that it is impolitic in this, that our adversaries have the power, and will certainly exercise it, to shoot as many of our men as we shoot of theirs. I did not say this in the public letter, because it is a subject I prefer not to discuss in the hearing of our enemies.

There has been no thought of removing General Frémont on any ground connected with his proclamation, and if there has been any wish for his removal on any ground, our mutual friend Sam. Glover can probably tell you what it was. I hope no real necessity for it exists on any ground. Your friend, as ever,

A. LINCOLN.

September 24, 1861.— MEMORANDUM ABOUT GUNS.

WASHINGTON, September 24, 1861.

If twenty guns, and a carriage and appointments to each, shall be made, equal or superior to the Ellsworth gun and carriage exhibited some time since to Captain Kingsbury, and more recently to me, the quality to be judged of by Captain Kingsbury, and shall be delivered to the Government of the United States at this city within sixty days from this date, I will advise that they be paid for at the price of three hundred and fifty dollars for each gun with its carriage and appointments, and in addition will advise that reasonable charges for transportation from Worcester in Massachusetts to this city be paid. Will also advise that forty cents per round be paid for all good ammunition suitable for said guns, which shall be furnished with said guns, provided the amount does not exceed two hundred rounds to each gun.

A. LINCOLN.

September 29, 1861.— LETTER TO GOVERNOR MORTON.

WASHINGTON, D. C., September 29, 1861.

HIS EXCELLENCY, GOVERNOR O. P. MORTON:

Your letter by the hand of Mr. Prunk was received yesterday. I write this letter because I wish you to believe of us (as we certainly believe of you) that we are doing the very best we can. You do not receive arms from us as fast as you need them; but it is because we have not near enough to meet all the pressing demands, and we are obliged to share around what we have, sending the larger share to the points which appear to need them most. We have great hope that our own supply will be ample before long, so that you and all others can have as many as you need. I see an article in an Indianapolis newspaper denouncing me for not answering your letter sent

AMENDATORY APPENDIX.

Immediately after my arrival at Harper's Ferry, in a conversation with Colonel Miles as to his plan of defensive operations, he stated that his orders were to hold Harper's Ferry to the last extremity. I suggested that Maryland Heights appeared to be the key to the position, and offered the only feasible line of retreat should that become necessary, as well as the most defensible position should it become necessary to concentrate the entire force at any one point, and that it should be defended at all hazard and with the entire force if necessary.

To this view he assented, and informed me he had erected defenses on the summit, the position of our naval battery being about half-way down the southwestern slope.

I was requested by him to assume the direction of affairs on the left of the line, at Bolivar Heights. So soon as I had heard of the evacuation of Maryland Heights, I sought Colonel Miles, as before stated, and proposed retaking the position. He informed me, however, that the heavy guns had been spiked and thrown down the mountain, and that the four brass field-pieces were spiked, the spokes cut from the wheels, and, therefore, they could not be removed and were utterly useless.

Without the heavy guns, which would have covered the crossing, the transfer of the forces across the Potomac was deemed by him impracticable.

The considerations which prompted me to concur in the judgment of the council of war, when the surrender was decided upon, were as follows:

1st. The loss of Maryland Heights and their occupancy by the enemy in a force greatly superior to our own entire force.

2d. The commanding officers of the batteries composed of our best guns reported their ammunition expended, except canister, &c., for short range.

3d. All hope of re-enforcement had departed, the firing during the engagements of Major General McClellan's forces with the enemy having, day by day, receded northwesterly.

4th. The enemy in front, exclusive of his strength on Loudoun and Maryland Heights, was double our own, the preponderance of available artillery being still greater.

5th. There appeared no good object to be attained by the sacrifice of life without a reasonable hope of success.

6th. The council of war was unanimous in the opinion that further resistance was useless.

I was verbally informed by Major McIlvaine, Colonel Miles' chief of artillery, that the entire amount of artillery at the post was forty-six pieces, exclusive of seven small guns, known as Ellsworth guns.

On Sunday night, the evening before the surrender, I proposed to send to the front all the guns at Camp Hill (the interior work), and was informed there were neither horses nor harness to move them.

On Sunday afternoon I ordered the Twelfth New York Militia to the left front, to participate in the engagement. It was ordered back by Colonel Miles, as I am informed, on the ground that Camp Hill must be held by a part of our force. This position was protected on all sides by our outer lines.

Respectfully submitted.

JULIUS WHITE,
Brigadier-General, U. S. Volunteers.

New Weapons of War

WHEN the first ironclad battleship, *The Merrimac*, scattered destruction throughout the supposedly impregnable Union fleet, terror spread in New York and Washington, where an invasion was momentarily expected from this new sea monster. Fortunately, however, President Lincoln had earlier accepted this proposition from John Ericsson, inventor of *The Monitor*.

New York, August 29, 1861

To His Excellency, Abraham Lincoln,
President of The United States.

Sir:

The writer, having introduced the present system of naval propulsion and constructed the first screw ship of war, now offers to construct a vessel for the destruction of the rebel fleet at Norfolk and for scouring the Southern rivers and inlets of all craft protected by rebel batteries. Having thus briefly noticed the object of my addressing you, it will be proper for me most respectfully to state that in making this offer I seek no private advantage or emolument of any kind. Fortunately I have already upward of one thousand of my caloric engines in successful operation, with affluence in prospect. Attachment to the Union alone impels me to offer my services at this fearful crisis — my life if need be — in the great cause which Providence has called you to defend. Please look carefully at the enclosed plans and you will find that the means I propose to employ are very

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Wolk Magazine of Letters
June 1940 Vol 6 #8

New Weapons of War

simple — so simple, indeed, that within ten weeks after commencing the structure I would engage to be ready to take up position under the rebel guns at Norfolk, and so efficient too, I trust, that within a few hours the stolen ships would be sunk and the harbor purged of traitors. . . .

I cannot conclude without respectfully calling your attention to the now well-established fact that steel-clad vessels cannot be arrested in their course by land batteries, and that hence our great city is quite at the mercy of such intruders, and may at any moment be laid in ruins, unless we possess means which, in defiance of Armstrong guns, can crush the sides of such dangerous visitors.

I am, sir, with profound respect, your obedient servant,

J. Ericsson

It is not for me, sir, to remind you of the immense moral effect that will result from your discomfiting the rebels at Norfolk and showing that batteries can no longer protect vessels robbed from the nation, nor need I allude to the effect in Europe if you demonstrate that you can effectively keep hostile fleets away from our shores. At the moment of putting this communication under envelope it occurs to me finally that it is unsafe to trust the plans to the mails. I therefore respectfully suggest that you reflect on my proposition. Should you decide to put the work in hand, if my plan meets your own approbation, please telegraph and within forty-eight hours the writer will report himself at the White House.

